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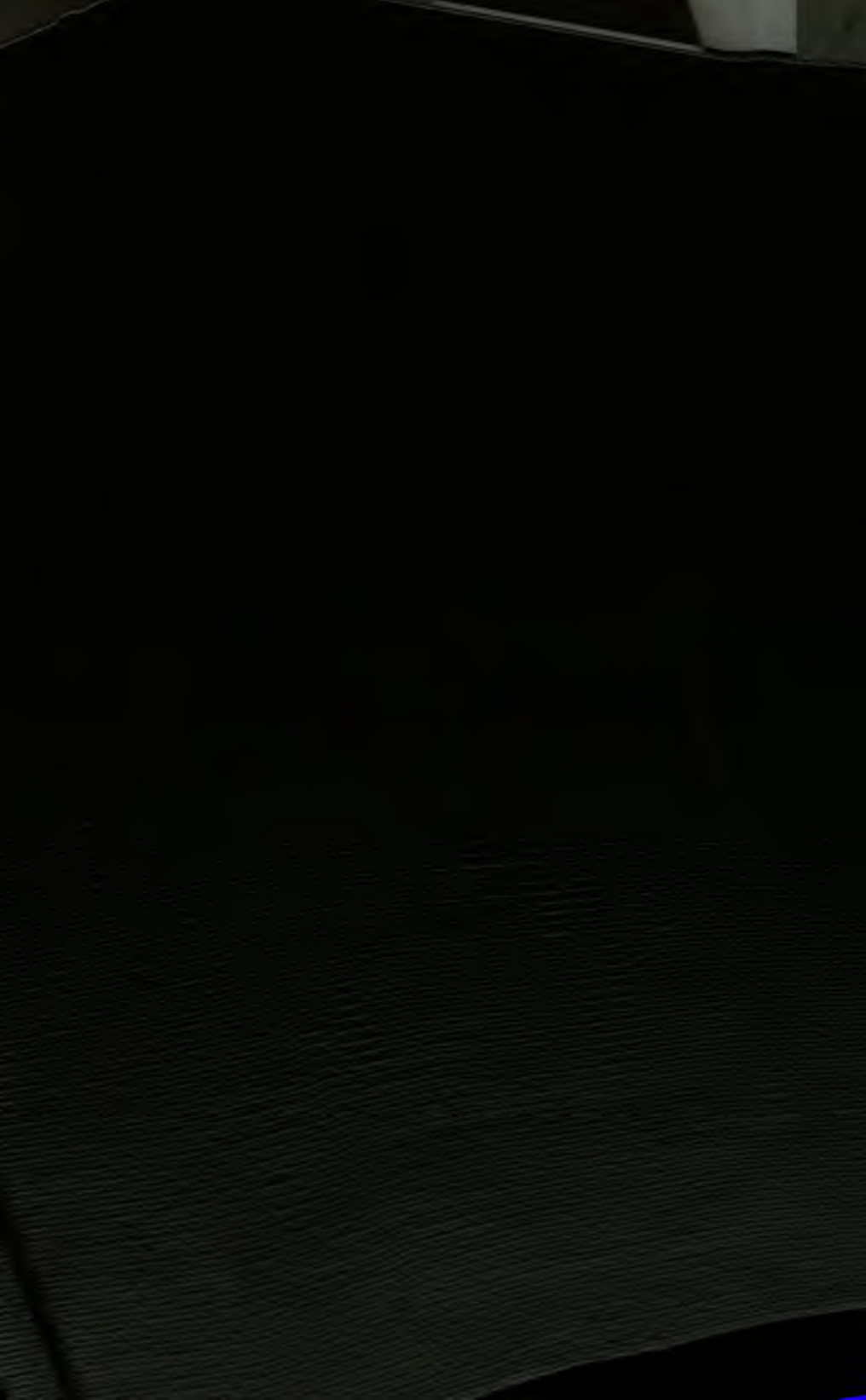
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THE
Tree Planting and Fountain Society
OF BROOKLYN, N. Y.



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WITNESS TREE. FROM FORESTS OF MICHIGAN.

BULLETIN No. 1.

Office, No. 44 Court Street, Room 32,

OFFICE HOURS AFTER 2.30 P. M.

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THE

Tree Planting and Fountain Society

OF BROOKLYN, N. Y. —

BULLETIN No. 1.

OBJECTS.

The objects of this Society shall be to promote the planting and protection of trees, the erection of drinking fountains, and otherwise to render the City of Brooklyn attractive.

OFFICE, NO. 44 COURT STREET, ROOM 32.

OFFICE HOURS AFTER 2.30 P. M.

FEBRUARY, 1894.

BROOKLYN

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THE
Tree Planting and Fountain Society
OF BROOKLYN.

OFFICERS FOR THE YEAR 1894.

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PREFACE.

BY request of the TREE PLANTING AND FOUNTAIN SOCIETY of Brooklyn the Secretary has collected the following papers, which are self explanatory. It is believed that this arrangement will give the people a correct idea of the causes that have led to the present status of the Society. The selections are arranged in chronological order. There are certain repetitions which would not have occurred if a single paper had been prepared. The description of a suitable tree for transplanting and the directions for planting are largely taken from B. E. Fernow, Chief of the Division of Forestry, Washington, D. C., with his permission. The letters from experts will be read with interest and profit. The differences in opinion are proof of independence in forming them. The standing of the authors commands respect. No letter has been admitted except such as were written by men of experience and skill. It will pay well to study them carefully. A difference of taste in selection of trees is likely to be various as in the choice of articles of food or wearing apparel. It is hoped that a careful study of these letters will result in an enlarged view of the subject of arboriculture, in an increased interest in its study and in a keener enjoyment of its pleasures.

L. COLLINS.

[From the Standard-Union, February 12, 1891.]

Arboriculture.

Secretary L. Collins, of the Tree Planting and Fountain Society of Brooklyn, gives some valuable information—the formation of Tree Planting Clubs suggested.

To the Citizens of Brooklyn :

Brooklyn is a beautiful city, happy in location, broad in extent, varied in surface, salubrious in climate, rich in homes and intelligent and refined in her citizens. What is to hinder her being the queen city in the United States? One thing is painfully wanting—that is a system of arboriculture commensurate with her other attractions. The trees now in the streets are, to a great extent, creatures of chance, with little taste in selection and less care in planting ; and in a great majority of cases wholly neglected, it is no wonder we find them in their present condition. Many of them too thickly set, leaning, deformed, bruised, gnarled, partly dead, untrimmed, broken, limbs that are in the way roughly cut off, leaving ugly stubs, allowed to head too low and then trimmed up high after they are too mature to regain their natural form and grace, and so on to the end of the list of ills. It is not just to say there are no beautiful trees in Brooklyn, but it is safe to assert that a well developed, graceful tree is the exception, and that these exceptions are by far too few.

That a stimulus may be given to arboriculture it is desirable that the people make a study of trees. In passing through the streets let them take notice of the trees—consider the points of beauty and deformity—whether they are too many or too few, which ones could be removed with advantage, where new ones should be placed, what varieties would be best suited to certain localities and so on. In passing small parkings and detached residences where trees and shrubbery are used, let them examine the varieties and arrangement, see which would improve appearance by removal, where additions could be made and what should be added. By careful attention of this kind, an improved taste would develop, a more lively sense of the importance of the study of arboriculture would obtain, and a readiness to help the work along would result.

To Whom Trees Belong.

Some are the property of the city, some of those on whose premises they stand, some partly of the city and partly of the abutters. In another sense they belong to the public. All enjoy their beauty, their cool shade in summer, their healthful influence upon the air and their partial protection from wind and storm. In so much they are common property. In return for the right to enjoy the pleasures and benefits of trees, people should assist in protecting them from injury. In return for legal possession, the owner should make them as attractive as possible. In case he does not know what to do he should ask counsel from some person who is competent to direct.

Financial Value of Trees.

Take two blocks in all respects alike, except that one has trees well selected, set at suitable distances apart and well cared for; the other with no trees, or with trees carelessly set and neglected, as frequently happens. A person wishing to purchase a residence would be likely to choose the one having fine trees, although he may be required to pay more in addition than many times the cost of the trees, and when the houses are all occupied it will be more than likely the block having fine trees will have people of better culture, and hence more desirable for neighbors; thus, from a financial standpoint, trees pay.

Varieties to Plant.

Trees should be selected with reference to locality, quality of soil, extent of space and circumstances of surroundings in general. Large growing varieties should be selected for places of large extent, smaller varieties for places of less extent. A low, compact tree is not desirable for street planting. Sometimes it is difficult to decide what variety is best suited to a place; careful attention will enable one to make a good selection. In case of doubt aid may be obtained from some friend who has given the subject more attention. Prospect and Central Parks are excellent places to study trees.

About Planting Trees.

Golden Rule.—Deal only with responsible parties, pay good prices and demand good services.

No one should be employed to purchase or plant a tree who does not understand the business. A mistake made at the planting lasts during the life of a tree.

The ground where a tree is to be set should be examined to see whether it is suitable for tree growth. If it is not, the poor earth should be removed and good soil substituted. The amount to be removed depends upon circumstances, and can be determined by examination. A tree to flourish must have plenty of good ground in which to grow. It should be good to the depth of three feet and an equal distance in all directions from the trunk when practicable. The amount of good soil is of greater importance than the shape it is in.

Distance Apart to Plant Trees.

Trees should be placed so far from one another that at maturity they will not meet. Such distances will enable them to develop in their natural beauty, give them sufficient space to be vigorous, allow the sun to shine on the ground under and between them a portion of every sunny day, driving away malaria and enabling grass to grow and so increase healthfulness and beauty. Trees planted at such distances allow architecture to show to better advantage and present the pleasing combination of sunshine and shadow on the ground. To determine the distance to intervene, measure the spread of full-grown trees of the same varieties as those to be planted, and let this measurement be taken. It will vary from thirty to eighty feet. Trees should alternate on opposite sides of the street.

Tree Planting Clubs.

The residents of every block would do well to organize a club of those living on it, and, after mature deliberation, agree as to what should be done, determine what trees should be saved and what ones should be removed, and then trim and place guards around those worth saving, remove the sickly, injured or deformed ones and plant new ones when desired. All the residents should feel that they have an interest in every tree. Every one should be willing to sacrifice individual interest for general welfare. People would say of trees thus planted not "my trees" but "our trees;" a sense of common property, a common interest, a common guardianship would prevail. It may be said that such a result cannot be obtained. Perhaps not at first, but after a little

while personal likes will give way to general good. In case a plan satisfactory to all cannot be devised let the problem be submitted to some arboriculturist of undoubted skill and by whose decision the club can abide. The trees on the block should be planted and cared for by the club and the expense assessed on the residents or furnished by subscription.

Street Crossings.

Where streets cross at right angles, or nearly so, two trees of large growing sorts may be placed on each corner lot, far enough from the corner not to interfere with the culvert where there is one. Each tree should be placed on the tree line of one street and the fence line of the other street. If this were done eight trees would be placed at every intersection of two streets. They would be far enough from the buildings so that they would attain their full growth without interfering. In streets of ordinary width these trees would form one mass of foliage and make an arch over both streets. Such a clump of trees as that would be a thing of beauty and would afford a wholesome shade where it is most needed and where it could do no injury. And since at nearly half the street crossings surface cars pass, the trees would cast an acceptable shade for people waiting for the cars and afford a partial protection in case of storm. These street crossings are barren in appearance and such a clump of trees would be a relief to the eye, two at least being visible from any standpoint. At some crossings it would not be possible to plant all the eight trees, but usually enough could be set to render the effect nearly complete.

Where streets form an acute angle, a tree of large growing variety may be placed in the angle, so that it may attain its full size and not interfere with the surroundings. A tree so placed in good soil and protected will develop into a beautiful object and last a long time.

The ideas set forth are intended to be suggestive. The good taste of the people, when once enlisted in the study of arboriculture, will find ample opportunity to adorn the streets and avenues. It is a work in which all should be interested. It will take time to accomplish the desired result. So much the greater is the need of avoiding delay.

L. COLLINS, *Secretary.*

[From *The Standard-Union*, March 20, 1891.]

A Paper.

At a regular meeting of the Tree Planting and Fountain Society, in the directors' rooms of the Art Association Building in Montague street, last evening, * * * * * Secretary Collins read the following paper :

"Various opinions are entertained as to what parties should carry on the work of arboriculture in Brooklyn. One is that it should be under the control of the Park Commission; another is that a separate commission shall be created by the city authorities and the work be under its control, as in the city of Washington, the expense to be borne by the city treasury. Another is that this society should carry on the work and trust to the generosity of the citizens for remuneration. Another is that it should remain where it now is, in the hands of the people. Much may be said in favor of all these methods. The last appears to me to be the best plan, at least for the present. The idea of possession in relation to trees is deeply seated in the minds of the people of Brooklyn. They claim the right to have trees or not to have them on their premises. They also claim the right to select the varieties and to decide upon the number and to choose locations. An attempt to change this feeling would be attended with a loss of interest, which would be unfortunate. The pride of possession is deeply seated in human nature. One cares for his own as he would not care for that of another. The disposition to have and to do already exists. The knowledge of what to do and how to do it is the only thing wanting. It appears to me the legitimate work of this society is to supply this want where it exists. We have no power to enforce; we can only persuade. People are desirous of learning when they are convinced they have a competent instructor. If this society gathers within its membership those citizens who have refined taste and a knowledge of arboriculture and horticulture, and if it demonstrate to the satisfaction of the people that such is the case, and, moreover, if it be careful that nothing shall emanate from this society, with its sanction, but such ideas as shall have stood the test of examination by good judges and have been approved by them, then people will receive with thankfulness whatever the society may promulgate. When this condition is reached the era of progress will begin, and then we may with confidence look forward to a time when with a proper distribution of trees, shrubbery, flowers and lawns, the city of Brooklyn will be radiant with a new glory. To obtain this result should be the work of this society. I would have every tree an object of beauty, every court-yard and garden radiant with shrub and flower and lawn. With what pleasure then would we pass through the streets! What a bond of sympathy would exist among the citizens, and with what satisfaction would we admire one another's handiwork!

"Tree planting can be accomplished most satisfactorily by

nurserymen and florists. They are located in all parts of the city and within easy reach of all. Arboriculture is one branch of their business. They are supposed to have a knowledge of trees and of tree planting and trimming, and the removal of old ones, and they have implements and help necessary to perform the work. An increased interest in arboriculture will have a corresponding influence upon them, and when it becomes known to them that their work will become subject to examination and criticism and comparison with that of others of their profession, they will take pride in doing their work well. Rivalry will spring up in that branch of their business, and to secure and retain patronage will become an object worthy of their best efforts. People who wish trees planted sometimes forget that a good tree commands a good price, and that good workmen command good wages. And thus it happens that florists who are required to plant a tree for a limited price must furnish a cheap tree and slight the labor of setting it. Again, florists know that many people are unable to judge between good and poor trees, or between good and poor planting, and taking advantage of these facts, some of them charge high prices and give poor returns. This society would do well to make inquiry into the standing of nurserymen and florists, and find which are reliable and make a list of them, which list would be furnished, upon application, to persons wishing work done."

At the conclusion of Mr. Collins' paper the society adopted a resolution in harmony with his suggestions regarding nurserymen and then adjourned.

[Brooklyn Times, March 14, 1893.]

Announcement.

Mr. L. Collins, the Secretary of The Tree Planting and Fountain Society of Brooklyn, gave out the following statement from the society yesterday afternoon. He said:

"The society has leased rooms 32 in the Hamilton Building, at 44 Court street, for its headquarters. The business meetings will be held in these rooms. They will be open from 2.30 to 5 P. M. every day except Sunday, during which time a representative of the society will be in attendance, who will cheerfully give information relating to the work of the society to any one interested. The amount of work done by the society will depend on the amount of means at its disposal. All moneys received from every source will be carefully applied so as to insure the greatest benefit to arboriculture in Brooklyn. It is the desire of the Board of Trustees to conduct the affairs of the society in such a way as to command the respect and confidence of their fellow citizens. They are conscious of the fact that no considerable amount can be accomplished unless there is union of sentiment and harmony of action on the part of the citizens. The society is collecting

information relating to arboriculture, including the quality and variety of trees, the examination and preparation of the ground, the method of planting and guarding trees, trimming and after care, protecting them from injury, from insects and animals, etc.

"This society well knows that success lies in one way only, that is in the confidence and support of the people. It also knows that this confidence and support can be had only by deserving it. To this end the society has, by much careful labor, gathered information bearing on the subject of arboriculture from the best sources in the country, and it feels that it can with confidence appeal to the citizens of Brooklyn and ask them to examine into the present work of the society, and, if it is found to be satisfactory, to help accomplish it.

"Florists stand ready, and under favorable circumstances would be glad to assist. The subject of arboriculture is so imperfectly understood by the people in general that good florists feel that frequently good services are not appreciated. There is a disposition on the part of many to get labor relating to trees, whether planting, guarding or trimming, done for so small a price that responsible florists do not care to engage in it, and they are not encouraged to make any considerable preparations for it.

"May we not as a people unite in this matter, learn who among our florists are competent and responsible and place the planting of and caring for trees in their hands, thus making it to their interest to prepare the means and the appliances necessary. It might be a good plan to place certain districts under the care of particular florists, and so to let them feel the responsibility and enjoy the pride resulting from work well done. All the trees in the city should be examined once a year by a competent person, and what trimming and pruning are required should be attended to. By apportioning districts to particular individuals the work could be done at such times as might be convenient and so be done at less cost to the owner and with greater profit to the florist.

"Thus would spring up a class of skilled men within easy reach from any point of the city, who would make arboriculture a study and enable the people to do away with that class who are not competent for the work. Let us all unite in beautifying and making more comfortable and more healthful our beloved city. Let us call into requisition the highest taste and the best execution and confidently expect corresponding results. The society desires to make its rooms a place where any suggestion on the subject from any citizen will be thankfully received and where any question may be asked with the assurance that the best answer within the reach of the society will be given."

[From the *Brooklyn Times*, April 8, 1893.]

For Shade and Beauty.

SOME TIMELY HINTS ABOUT TREE PLANTING IN BROOKLYN.

No. 1.

To the Citizens of Brooklyn :

It is conceded that foliage adds to the salubrity of the air and climate. Foliage is produced by trees, shrubs, flowers and grass. The intelligent distribution of these also adds greatly to the beauty of a place. The degree of salubrity added depends upon the quantity of foliage. The degree of beauty depends upon selection and arrangement. Knowledge is necessary to select wisely. Taste is necessary to arrange so as to produce the best effect. With an intelligent distribution of trees, shrubs, flowers and lawns the climate of Brooklyn will be more salubrious and its beauty greatly enhanced. With agreement in sentiment and harmony in action this generation may bequeath this city to the next a veritable park—the pride of those who made it and the joy of those who inherit it.

This is a work as extensive as the city. It will add to the health and pleasure of residents ; it will delight the transient visitor. It will invite those seeking homes ; it will enhance the value of property ; it will furnish pleasing occupation for the lover of nature ; it will surround the young with refining influences. It will become an object of common adoration and stimulate neighborly intercourse. The expense will be very small compared with resulting benefits. The gain will be shared by all ; all should assist in the work.

How can so desirable an end be obtained ?

Some can contribute means for procuring, some can supply knowledge for selecting, some can furnish taste for arranging ; all can assist in executing, maintaining and protecting.

OUTLINES SUGGESTED.—At street intersections, where practicable, place eight trees of large growing varieties, two on each corner, each tree on the tree line of one street and on the stoop line (fence line) of the other street. In time they will form a clump of trees and arch over both streets, furnish a wholesome shade in summer, constitute a thing of beauty and furnish a great amount of foliage. Between these clumps each block may be treated as a miniature park. The trees should be far enough from each other that they will not touch at maturity. The great mistake is made of selecting trees of large growing varieties and planting them too closely. Medium to small trees should be used on streets of ordi-

nary width. They should be so placed as to produce a pleasing variety in form, size and shade of foliage. In some places shrubs and vines may be placed in court-yards; bare walls may be covered with creeping vines, flowers and foliage; plants in boxes and pots may be set on piazzas, stoops and window sills. Grass should be carefully cultivated on every bit of ground not covered by pavements or flagging. Trees should be selected and arranged with reference to the entire block, and not with reference to a particular house. Everything inside of fences should be arranged with reference to individual preferences and individual tastes; everything outside with reference to the entire block. With such an arrangement all would enjoy the greatest beauty.

CLUBS.—The residents of every block would do well to organize a club of those living on it, and after mature deliberation agree as to what should be done, determine what trees should be saved and what ones should be removed, and then trim and place guards around those worth saving, remove the sickly, injured or deformed ones and plant new ones where desired. All the residents should feel that they have an interest in every tree. Every one should be willing to sacrifice individual interest for general welfare. People would say of trees thus planted and protected, not "my trees," but "our trees;" a sense of common property, a common interest, a common guardianship would prevail. It may be said that such a result cannot be obtained. Perhaps not at first, but after a little while personal likes will give way to general welfare.

In case a plan satisfactory to all cannot be devised, let the problem be submitted to some arboriculturist of undoubted skill and by whose decision the club could abide. The trees on the block should be planted and cared for by the club and the expense assessed on the residents or furnished by subscription.

L. COLLINS, *Secretary*.

[From the *Brooklyn Times*, April 15, 1893.]

To Shade the Streets.

SUGGESTIONS FOR TRANSPLANTING AND CARING FOR TREES.

NO. II.

Golden Rule—Deal with none but responsible parties, pay good prices and demand good services.

DESCRIPTION OF A TREE SUITABLE FOR TRANSPLANTING.—It should have an abundance of roots. The roots sustain the life of

a tree. There should be plenty of them, compactly grown within a small compass, and they should not be stripped of their bark or torn at their ends or dried up.

It should have a normal form and well-proportioned development of shaft and crown. The shaft should be clean and straight, neither thick-set and short, nor thread-like and over elongated, but gradually tapering and strong enough to hold up its head without support. The normal crown is characterized by vigorous, full-sized leaves, if in leaf, or by a large number of thick and full buds ; it covers the main stem one-third to one-half of its length with a symmetric spread evenly branched, and has only one leader of moderate length.

The length and vigor of last year's shoots, number and thickness of buds and appearance of the bark afford means of judging the healthy constitution of trees.

TREATMENT BEFORE TRANSPLANTING.—Transplanting is at best a forcible operation ; and injury to the roots, although it may be small, is almost unavoidable. The roots are the life of the tree and need the most attention. In taking up a tree for transplanting the greatest care must be exercised to secure as much of the root system intact as possible.

A healthy looking tree may have the certainty of death in it if the root fibres are dried out. To prevent drying during transportation cover the roots with moist straw or moss or bags, or, if practicable, leave on them as much soil of the original bed as possible. This is not intended to apply to nurserymen in preparing trees for shipment. At the place where the tree is to be planted, if the planting cannot be done at once, "heel in" the roots ; that is, cover them and part of the lower stem with fresh earth, or place the tree in the plant hole, throwing several spadefuls of earth on the roots.

Pruning roots and branches is almost always necessary, but must be done with great care, especially as to root pruning. The cutting at the roots should be as little as possible, only removing with a clean sharp cut the bruised and broken parts. Extra long tap roots may be cut away, but all the small roots should be preserved. The cutting of the tap is done to bring crown and root into proportion ; the more loss at the root system has been experienced the more need of reducing the crown system ; larger trees, therefore, require mostly severer pruning, especially on poor soil ; yet if there be fibrous roots enough to sustain great evaporation from the crown the less cut the better. With large trees

severe pruning is less dangerous than too little. A clean cut as close as possible to the stem or remaining branch will facilitate the healing of the wound. No stumps should be left (this applies to deciduous trees and not to conifers). Shortening of the end shoots to one-half or two-thirds of their length may be done a little above a bud which is to take the lead. As a rule, the pruning for symmetry should have been done a year or so before transplanting, but may be done a year after.

SOIL.—The soil where the tree is to be planted should be examined by a competent person to determine whether or not it is suitable for tree growth. If it is not, the poor earth should be removed and good soil substituted. Plenty of good soil is necessary to successful tree culture. The soil should be good to the depth of from three to four feet, and an equal distance in all directions from the trunk of the tree when practicable. The quantity of good soil is more important than the shape it is in.

ROOTS.—When the soil is good deep down, roots will naturally penetrate the earth and remain out of sight and out of the way. But if the soil below is poor the roots will rise to the surface and spread over a large space in search of nourishment. This condition is very objectionable and should be guarded against. A few varieties incline to send roots near the surface.

PLANTING.—Planting is best done by two or three persons. One, who manipulates the tree, is the planter and responsible for the result; the others do the spading under his direction. If the root system is developed sideways but not centrally, as is often the case, a hill should be raised in the hole to fill out the vacant space in the root system; the earth of the hill should be pressed down to prevent settling. When the hole is in order the planter holds the tree in the proper place. The others spread the roots into a natural position, then fill in the soil, using the good soil first—small spadefuls deliberately thrown over the roots in all directions—while the planter, by a slight shaking and pumping up and down of the stem, aids the earth in settling around the rootlets. A close contact of the soil with the rootlets is the secret of success in planting. Only fine, mellow soil, not too moist, and free from stones, will permit such close adjustment to the rootlets, which should also be aided by hand and fingers filling in every crevice. The planter, while setting the tree, must exercise care to keep it in proper position and vertical until the soil is packed so as to keep it in place; then the others rapidly fill the hole, the planter treading down the soil firmly after a sufficient quantity is

filled in, finishing off a little above the general level to allow for settling. Great care should be taken to keep the tree plumb.

WATERING.—The practice of using water while planting can hardly be said to be a good one, unless the water is very carefully applied with a "rose" after the soil is well filled in and packed around the fibrous roots; especially with a soil which has a tendency to clog there is great danger of an uneven distribution and settling, with consequent empty spaces between the roots. More trees are probably killed by too much water in transplanting than by too little. Water after transplanting (and perhaps before the last shovels of earth are filled in), especially if the soil was dry, is useful and should be applied during the hot season, choosing the late afternoon or evening for applying it. Trees planted very late in the season require greater care and more water than those set earlier.

AFTER CARE.—Keeping the ground around the tree free from weeds and grass, and preventing it from baking, by occasional hoeing and raking, is advisable. To prevent the tree from being swayed by the wind, if of large size, they should be staked firmly; a loose post is worse than none. The tying should be so done as not to cut or injure the tree; a tree box insures more safety against accidents. With the development of the crown it becomes necessary to trim it so as to carry the top above reach. Trees should not be used as hitching posts, nor should children be allowed to disturb them or in any way meddle with them.

TIME TO PLANT TREES.—Spring, after the frost is well out of the ground and before the buds open, is, as a rule, the best time for transplanting, although with care it can be done all the year round. A murky or cloudy day is preferable to a sunny one for that operation. In autumn, after the leaves fall, is the next best time. Some maintain that autumn is as favorable as spring. The period in which transplanting may be done is longer in the fall than in spring and work is not so pressing, and besides, preparation may be made during the summer when labor is abundant.

SIZE OF TREES TO PLANT.—Although as a rule small trees have a better promise of success, other considerations recommend the choice of larger sizes for streets and ornamental planting. Trees of any size can be successfully transplanted, but in proportion to the size grows the difficulty, the amount of work and the care necessary. As a rule the largest size should not exceed from two to three inches in diameter near the base, nor from ten to fifteen feet in height. The variety of the tree should be con-

sidered in selecting the size. There are kinds that will not succeed well unless transplanted while smaller. Mainly such as have soft spongy roots, as the tulip and the chestnut.

SELECTION OF VARIETIES.—In selecting the variety of tree to plant one should take in consideration the surrounding conditions. The quantity of soil available for the roots should be determined and its quality examined, whether it is good or poor, heavy or light, wet or dry. The width of the street, kind of pavement, width of sidewalk, amount covered and amount uncovered, material used for walks, whether the buildings are placed on the building line or set back from it, and if so, how far; the amount of dust likely to be raised, the condition of the atmosphere, whether it is vitiated with gases and smoke from manufactories in the vicinity, the grade of the street; steep grades allow water to run off quickly, giving little time for it to soak into the ground; exposure to raking winds and other conditions should receive attention to secure the best result.

It will be seen that to make the best selection one must have a knowledge of the requirements of different varieties of trees and their adaptability to existing conditions.

It is desirable to have as great a number of varieties used for streets as practicable. We could do more to beautify our city by exercising a greater range of choice as to the trees placed in the streets.

DISTANCE APART TO PLANT TREES.—Trees should be placed so far from each other that at maturity they will not meet. Such distance will enable them to develop in their natural beauty, give them sufficient space to be vigorous, allow the sun to shine on the ground under and between them a portion of every day, driving away malaria and enabling grass to grow and so increase healthfulness and beauty. Trees placed at such distances allow architecture to show to better advantage and present the pleasing combination of sunshine and shadow on the ground. To determine the distance to intervene between trees measure the spread of full-grown trees of the same variety as those to be planted, and let this measurement be taken. It will vary from 30 to 80 feet. In narrow streets they should be double these distances apart and should alternate on opposite sides of the street.

PROTECTION OF TREES.—Protection of trees may be divided into two parts, supporting and guarding from injury. A tree when planted should be supported in an erect position until its roots have taken a firm hold upon the ground and are able to

hold the tree in an erect position. This will take several years, the time depending upon circumstances. After that the tree will be able to support a guard. All young trees when transplanted require a support ; only such as are exposed to danger require a guard. That proper support has not been supplied is proved by the great number of leaning trees in the city. That the guarding has not been well done is proved by the great number of trees that have been injured, many of them beyond the possibility of recovery. This subject deserves careful attention. Very few satisfactory supports have been presented. There is a large number of efficient guards if they are properly applied.

L. COLLINS, *Secretary.*

[*From Brooklyn Times, April 22, 1893.*]

Hints on Arboriculture.

TIMELY SUGGESTIONS ABOUT PRUNING AND TRIMMING TREES.

NO. III.

A tree that has been grown and pruned by a competent person until it has reached a size suitable for transplanting and then has been located and transplanted by one skilled in the business, and after that for several years has been properly supported and guarded and shaped as to its crown for the place it is in, and after that receives protection and has room in which to grow, seldom will fail to develop in its natural form and become an object of beautiful proportions.

Trees have an individuality as marked as that of the animal kingdom. An attempt to change this individuality will be likely to be unsuccessful, hence the necessity of skill in selecting, locating and training. Trees may be grown as individuals, single and isolated, in which condition they develop in their natural form, modified somewhat by pruning if that attention be given to them, or they may be grown in clumps, that is, placed so near to each other that they do not have an opportunity to develop in their natural form, but are modified by surroundings. If the number is small and the trees are symmetrically arranged the clump takes a form of its own, as a whole. The clump is symmetrical ; every particular tree is deformed. Clumps may be made to assume almost any shape by selection and arrangement of the single trees. An extended clump becomes a grove—greatly extended it becomes

a forest. In cities there is no opportunity for forest—little for groves. There is seldom opportunity for more than single specimens, groups or clumps.

It will be seen that in planting trees the nature and possibility of the single tree must be considered in order to form a correct estimate of the result. Tree culture, to be successful, must be considered with intelligent care from the seed to the mature product; the desired end at all times should be kept in view. Little is to be done at any one time—a touch here or there—a small branch shortened or taken off at the proper time—all very simple and easy; the result is admirable, provided skill directed the work. All this may be called pruning. A tree properly trained will require no large limbs to be removed unless they are dead. Pruning neglected necessitates trimming. Pruning has been neglected in Brooklyn. Trimming becomes necessary.

TRIMMING TREES.—It sometimes appears as if the only principle which directs this matter is that anybody can trim a tree, and as for wounds, let them alone and they will heal up by themselves. The assumption that the trimming of trees is a simpler matter than any other similar operation in arboriculture is one of those naive ideas that pass current by default; no one believes it, but it is allowed to be acted upon because no one thinks about it. None but experienced persons should be allowed to trim a tree. Branches should be cut close to the trunk, to a clean, smooth surface. No large wound should be exposed. It should be coated with such an antiseptic as tar and then allowed to heal, as it will do if the operation is properly performed and the tree has any considerable vitality.

When it becomes desirable to “head back” a tree by cutting large branches at a distance from the trunk; or, indeed, when any large branch is to be cut off, it should be so managed that it will not split down and thus make an unnecessarily large wound. This may be prevented by making two cuts, the first time cutting off a foot or two above the final one. The cut should not be at right angles to the limb, but at an angle of say forty-five degrees or even sharper, where it can be so planned that a small branch is left at the extreme end of the wound. The process of healing will be more complete, and hence less likelihood of decay. The work should be so planned that the wound will be exposed to the rain as little as may be; for example, suppose a limb to be inclined so as to make an angle of forty-five degrees with a vertical line, cut it off with a cut of forty-five degrees to the limb; one way the wound will be horizontal and altogether exposed to the rain; the other way it will

be vertical and exposed but little. When a branch is cut close to the trunk the wound will be vertical. When in "heading back" trees upright branches are cut off at right angles, the wound is horizontal. The sun dries the wood, if unprotected, and causes checks, which allow the water to penetrate the wood, and decay is certain. It is sad to see how carelessly much of the trimming has been done. A skilled person will so trim a tree that it will present a neat and cleanly appearance. A wide chisel and a mallet are serviceable in trimming. Small branches may be cut off with them, and large wounds may be made smooth.

TIME TO TRIM TREES.—Probably the best time is in the spring, after the sap has stopped running. The operation may be continued until the last of June. Small limbs may be cut off at any time except when sap runs. Sap will run in the spring as long as the nights are freezing. No considerable trimming should be done in July or August. It tends to start a new growth, which may not mature sufficiently to stand the frosts of winter. When wounds are made during the growing season, May or June, they begin to heal at once, but when they are made in autumn or winter the wood in a measure "seasons" and facilitates decay.

The removal of large branches is attended with danger. Decay is apt to follow, and when it reaches the heart of the tree recovery is impossible. Continued decay may be slow, but it is certain. A tree may live a long time with large decayed places. When these places are exposed to view they are unsightly. Some kinds of trees bear trimming better than others.

The time is approaching when people will make a vigorous effort to repair deformities and injuries caused by neglect in the past. There is one sure remedy—remove the tree and plant a new one. It may be like parting with an old friend, but in a little while sorrow will cease, and in a little while longer joy will take its place. The other remedy is trimming. Let no one suppose that a large tree badly deformed can be completely restored to its natural form by trimming. It may be greatly improved and this means should be resorted to. Dead branches should be removed. Not only are they unsightly, but they also injure the tree by absorbing the sap. The longer they are allowed to remain the less likelihood is there of the wound healing. And besides there is danger of falling and causing injury.

L. COLLINS,

Secretary of the Tree Planting and Fountain Society.

[From the Brooklyn Times, April 29, 1893.]

Hints on Arboriculture.

SOME TIMELY SUGGESTIONS FOR THOSE WHO PLANT TREES.

NO. IV.

SUPPORTING AND GUARDING TREES.—A tree when transplanted has lost the firm hold it had upon the ground by means of its roots and needs support in an erect position until it has regained its hold. Unless such support is provided the movement of the tree by the wind tends to prevent the roots from taking hold and may result in the loss of the tree. If it does live it will be likely to lose its erect position and lean more or less according to circumstances. How great the difference between an erect tree and one that leans. When a tree has had support for several years and has become well rooted and the shaft has increased in size and strength, support is no longer needed. The tree is able to support itself, and if it needs a guard it can support that also.

A SUPPORT SUGGESTED.—A joist eight feet long and four inches square divided into two sections—one two and one-half feet long to go into the ground, the other five and one-half feet to remain above ground—makes a good support. The section above ground may have a wedge-shaped piece taken off three sides, one side being untouched, so that the top will be three inches square. That will give a tapering form which is graceful. On the section below the ground, on the side which was not changed above, against which side the tree will come, a section where the roots will come may be made wedge-shaped, so that it may come up to the shaft between the roots. The whole surface may be planed, a little taken off at the corners above ground, and the whole painted with two coats, and the paint well dried before it is put in the ground. Spruce is the most inexpensive timber, and it will last long enough below the ground if well painted.

When the tree is planted let the post be set first, and the ground below where the roots will come be well firmed around the post, then plant the tree separating certain roots so that the trunk of the tree may come in contact with the post; the post should be so set that the side against which the tree comes is plumb. This should be carefully attended to. When the tree is planted the shaft may be tied to the post in such a way as to hold it firm and allow it to grow and not chafe the bark; some soft material ingeniously applied will accomplish all this. Along streets the

post should be set on the street side of the tree. This will constitute a satisfactory support and will last as long as required. The portion above ground may then be removed. The part below will rot and cause no injury. This support is designed for trees of the ordinary size set along streets.

GUARDING TREES.—To guard a tree is to protect it from injury. The greatest injury comes from horses girdling by gnawing off the bark. The next greatest injury comes from the so-called guards. Another source of injury is the insect kingdom, some of which reproduce by spinning cocoons in safe, convenient places. What place is so convenient and so safe withal as the so-called guard? The cunning little fellows evidently suppose these so-called guards were placed there for their especial benefit, for they take possession and spin their cocoons, and in due time send their progeny in countless numbers up the tree to defoliate it. The so-called guard in this case is a real guard and protection to the enemies of the trees. One not knowing why the so-called guards are placed around trees might conclude that they were placed there to prevent the trees from developing. Some guards appear to say, "thus far shalt thou grow and no farther," and the iron bands are so placed and are so strong that they accomplish the edict. Once in a while a tree, like Samson of old, struggles with its bonds and succeeds in breaking them. Heroic tree! But its victory is purchased with a price. Look at those wounds. Will they heal? Again, some of the so-called guards are so firmly anchored in the ground that when the tree is swayed by the wind they wear through the bark and into the wood and cause injuries, some of which will never heal. Guards should not be used as supports. When a tree is able to support itself it is able to support a guard. A guard should not be fastened to the ground; it should be held by the tree or allowed simply to rest on the ground, so it may move with the tree, then there will be less danger of chafing. The ills of the so-called guards are numerous. Maybe, if trees could be endowed with the gift of speech for a little while, they would cry out, "Deliver us from horses and guards and we will be content."

Guards are unsightly. A tree cannot be ornamented. As well try to ornament a fine lawn. At their best guards detract from the appearance of a tree; many of them are positively ugly. The office of a guard is to protect from injury, not to ornament. The best guard is the one that accomplishes the object and is least conspicuous. It should be so constructed that it can be removed

easily and adjusted to suit the growth of the tree, and also allow the trunk to be cleansed from injurious insects. It should be almost as easy to remove and replace a guard as to open and shut a gate. A guard should be as light as possible, and so made that when off the tree it will occupy as little space as may be.

GUARDS SUGGESTED.—The first guard suggested is the enforcement of the laws that were designed to guard from injury our trees as well as other property. The law holds the owner of an animal responsible for any injury it may do. When the people are ready to enforce that law, trees will be effectively guarded against injury from all domestic animals. The present apathy of the people causes disregard of the law. People driving horses learn that trees may be girdled with impunity, and many allow it, for it saves the trouble it would take to prevent it. In Washington, the most beautiful of all American cities in point of trees, horses are not allowed to stand by a tree where it can do harm. It should be so in Brooklyn. A few instances of prosecution and punishment for injury to trees would exercise a salutary influence. A determination on the part of the people that the injury to trees by horses must be stopped, and this determination emphasized by an occasional conviction and punishment would put an end to it. Until the law is enforced it will be necessary to protect the trees by a guard of some kind.

Small trees with a post as a support as described above, may be effectively guarded by a piece of wire cloth with one-fourth inch mesh. The piece of cloth should be twenty inches wide at one end and fifteen at the other end and five feet long. One edge of the wire should be tacked to one side of the post and the other edge to the opposite side, covering all of two sides of the post and inclosing the tree. Double-pointed tacks are strong enough and can be easily drawn out when it is desirable to remove the wire for readjustment or for cleansing the tree from injurious insects that may have taken refuge there. This guard, if painted once a year, will last a long time. When the tree has grown so it does not need a support the post may be removed and the wire wrapped around the tree and made to fit snugly by lapping the wire and sewing the uncovered edge fast, using a small wire as thread. As the tree grows this thread may be taken out and more room given and then sewed again. It will be an easy matter to remove the wire for readjustment or painting or for any cause. This piece of wire, if well cared for, will serve the tree as a guard until it is six inches in diameter one foot from the ground. This post and

wire should not cost more than \$1.00. The same arrangement of wire cloth could be cheaply and easily applied to larger trees.

Another simple, easily adjustable and efficient guard may be made of wood. Take slats, say two and one-half inches wide for the bottom and two inches wide for the top and one inch thick, and of desired length. Tack the slats to the body of the tree where desired and as near together as thought best until the trunk is surrounded with the slats. Take a piece of brass for hoops one inch wide, pass it around the tree near the bottom of the slats and mark the points at the middle of each slat, punch holes of suitable size and fasten on with screws, cut the hoop from one-third to one-half longer than the circumference of the tree and fasten the surplus to the slats. In the same way place a hoop near the top of the slats, and, if desired, at the middle. Now remove the nails which were used to hold the slats in place while the hoops were being adjusted. This guard must be used only on trees having a straight and symmetrical trunk, smaller at the top of the guard than at the bottom. During the growing season the slats should be driven up occasionally to prevent binding. When it gets too small an additional slat can be inserted easily. This guard can be easily removed for readjustment, painting or for destroying insects. There are many similar devices, all within easy reach and inexpensive. For unshapely trees, or for trees standing in exceptionally exposed places, guards must be devised to suit the cases. Guards should be so fastened to trees that the fastenings will yield, if neglected, before the tree will suffer injury. It will be found preferable to use two short wire guards for the same tree instead of one long one. All guards should be painted some color that will be least conspicuous. Guards should be used only where there is need. A wire guard may be suspended by two nails, one on either side of the tree near the top of the guard. The nails may remain years and when taken out the wound heals. Wire nails are preferable.

This paper is too short to admit more than hints about protecting trees.

L. COLLINS,

Secretary of the Tree Planting and Fountain Society.

[From the Standard-Union, June 15, 1893.]

Save the Trees from Defacement and Injury by Advertisement Signs.

SOME PERTINENT CORRESPONDENCE OF VERY GENERAL INTEREST
TO BROOKLYNITES—EFFORTS OF THE TREE PLANTING
AND FOUNTAIN SOCIETY—AN ORDINANCE
WHICH SHOULD BE ENFORCED.

All citizens who are interested in preserving one of the most attractive features of Brooklyn, will be interested in the following letters between a well-known citizen of the Twenty-fourth Ward and the Secretary of the Tree Planting and Fountain Society of Brooklyn :

167 New York avenue,
BROOKLYN, N. Y., June 12, 1893. }

The Tree Planting and Fountain Society of Brooklyn :

SIR :—The enclosed is copied from your issue of 1890, and I suppose it to be still an ordinance in full form and effect. Within a few days there has been posted on the shade trees along Nosstrand avenue and other streets in the Twenty-fourth Ward, a host of advertisements, and, unless the posters are compelled to remove them, such work will be copied by others, and the trees become advertising posts.

Asking the aid of your officers and members to do the needful.

I am, yours truly,

W. S. COLVIN.

THE TREE PLANTING AND FOUNTAIN SOCIETY
OF BROOKLYN,
Room 32, No. 44 Court street,
BROOKLYN, N. Y., June 14, 1893. }

Mr. W. S. COLVIN :

DEAR SIR :—Your interesting letter of the 12th inst. has been received. The abuse of trees mentioned in your letter is not confined to the Twenty-fourth Ward ; it extends almost to the whole city. Nor is it a new thing. This society has been working years to create a sentiment in the city that will not allow any injury to trees. Great progress has been made in that direction. It appears that the time has come when the people will support action tending to prevent injury to trees. At the last meeting of this society a committee was appointed to consider the best course to take to preserve trees from injury by horses girdling them, and other things. The next meeting will be held Monday evening, the 26th inst., when it is expected a report of the committee will be made, and it is expected that immediate and determined action

will be taken to prosecute all persons offending the laws in this respect. Would it not be well for you to become a member of this society and assist by your counsel? This society will be pleased to receive and entertain any suggestions you may make.

Very truly yours,

L. COLLINS, *Secretary.*

The ordinance to which Mr. Colvin refers is, in full, as follows :

"Article No. VII., Sec. No. 24—No person shall paste, post, paint, print nor nail upon any of the curb, gutter nor flagstones, trees, lamp-posts, awning posts, telegraph poles, horse-posts, barrels, boxes and hydrants, in any of the public streets or avenues of the city, any handbill, poster or notice, under penalty of ten dollars for each and every offense."

[*Brooklyn Daily Eagle*, July 7, 1893.]

Trees and Trolley Wires.

NO HARM HAS BEEN DONE BY CUTTING OFF LIMBS.

To the Editor of the Brooklyn Eagle :

The meeting of the board of trustees of the Tree Planting and Fountain Society, held on Tuesday evening, June 27th, was called for the expressed purpose of considering the subjects of girdling of trees by horses and posting advertisements on trees. A member of the board had been requested to present a formal statement of the facts and a series of resolutions had been prepared in accordance with the expected statement. While the meeting was waiting for the member other subjects were presented and informally considered. A member of the society, and not a member of the board of trustees, asserted that he had been informed that great destruction to trees was caused by the workmen preparing to introduce the trolley system. The Secretary, fearing undue prominence would be given by the representatives of the press present to this charge, stated that he had been on nearly all the lines where the wires had been placed and had seen no evidence of injury to the trees. Since the meeting, in order to be certain, the Secretary has again passed over the trolley lines and made careful examination. He has seen no evidence of carelessness ; on the contrary, he reiterates his statement made at the meeting, that the men having charge of placing the trolley wires deserve great credit for the care they have taken of the trees. Where they have removed limbs it has been rendered necessary by allowing the tree to head too low. This feature of arboriculture in Brooklyn will be likely to be greatly improved by the introduction of the trolley system.

Trees that naturally head low down are not suitable for streets in cities. This subject will be likely to receive attention in the near future. On many streets trees are allowed to form an arch so low as to appear oppressive.

L. COLLINS, *Secretary*.

[From the *Brooklyn Daily Eagle*, July 13, 1893.]

Tree Barking and Other Things.

SOME INTERESTING ARBORICULTURAL CORRESPONDENCE.

To the Editor of the Brooklyn Eagle :

I believe that the inclosed correspondence will be serviceable if presented to the people through the *Eagle*.

L. COLLINS, *Secretary*.

J. & J. EAGER CO., IMPORTERS,
34 CLIFF STREET, NEW YORK, July 12, 1893. }

MR. L. COLLINS, *Secretary*, 222 Macon street, Brooklyn :

DEAR SIR :—A horse has this afternoon barked a tree at my premises, Waverly and De Kalb avenues, Brooklyn. The owner of said horse has promised to send a proper person to do what may be necessary to repair the damages. Should he do so, I would like to be able to judge if it is properly done. If he does not, where can I get an expert for the purpose? Can you advise me?

Very respectfully,

THOMAS H. UNCKLES,
292 De Kalb avenue, Brooklyn.

THE TREE PLANTING AND FOUNTAIN SOCIETY }
OF BROOKLYN, }
BROOKLYN, N. Y., July 12, 1893. }

MR. THOMAS H. UNCKLES :

DEAR SIR :—Your letter of to-day, with reference to the barking of a tree by a horse, is received. You say the owner of the horse has promised to send a proper person to do what may be necessary to repair the damage. The first question to be asked is whether or not the damage is repairable. If the barking is of such a nature that with care it will heal over entirely, and such care be given by the offender, then the damage may be said to be repaired. You would doubtless be satisfied, inasmuch as the owner of the horse desires to do the proper thing. It will require time to determine the result, unless the barking is of such a nature as will not heal. If that is the case permanent damage to the tree will result. It cannot be repaired. The question of extent of damage arises, and depends on the previous condition of the tree and the value you place upon it. The injury may be of such a nature as to leave an unsightly scar and ultimate decay. You may be satisfied with

some consideration, financial or otherwise. That depends upon your present notions. Suppose the tree to be injured so as ultimately to be unsightly, and you are in some way satisfied, how is it with the people who are continually passing and repassing your house? Have they no rights to be considered? I believe they have. And I believe these questions are being seriously considered, and that people who allow horses to girdle trees will be called upon to pay an amount at least sufficient to pay for removing the injured tree and planting a young perfect one. It is difficult to set a money value upon a perfect tree. A gentleman living not far from you has six trees five years old. He told me he would consider \$500 a small value to place upon them. Pass through the streets of Brooklyn and examine the tens of thousands of trees girdled by horses, some killed, some fatally injured, some badly scarred and deformed with shortened life, and try to estimate by money the damage. The people have suffered too long. Damage to trees by horses must be stopped. The law stands ready to be invoked. Line upon line has been given, precept upon precept. Mild means are not effectual. Something more severe appears to be necessary.

I am pleased with the tenor of your letter. I am delighted with the spirit manifested by the owner of the horse. He is an exception to that class who allow horses to girdle trees and then deny it. I hope this may be a model case, where full reparation for damage shall be rendered and all parties become better acquainted and better friends, and where injury to a tree may result in great benefit to trees.

Will you kindly keep me informed as affairs progress? Very respectfully yours,

L. COLLINS, *Secretary*.

[*From Brooklyn Daily Eagle, July 28, 1893.*]

Pictures of Brooklyn Trees.

A COLLECTION MADE BY THE TREE PLANTING SOCIETY.

The Brooklyn Tree Planting Society has just begun making a collection of a novel and interesting sort. It is designed to meet the convenience both of Brooklynites and visitors to this city who are lovers of arboriculture and who may not have opportunity to seek out the spots here that boast the finest trees. Some time ago Mr. A. A. Low requested the Secretary of the Society, Professor Lewis Collins, to make a selection of certain streets in Brooklyn well supplied with trees and have pictures of them made by a skillful photographer. Secretary Collins traveled over pretty much all of the streets that boast fine trees and made his choice of views to be photographed, the object kept in mind being to select not the finest trees, but types. It is the design to bring to the

rooms of the society pictures of certain specimens so that those who desire to inspect the collection may learn something of the trees of Brooklyn. The photographing was all done by Mr. B. J. Smith, of 168 Willoughby avenue. Thirteen pictures were made in all. They are framed neatly and hang on the walls of the Society's rooms at 44 Court street, where persons interested in the subject are invited to inspect them. Here is a list of the views prepared under Secretary Collins' direction :

Brevoort place from Bedford avenue, looking west.
 St. Mark's avenue from Brooklyn avenue, looking west.
 Clinton avenue from Greene avenue, looking north.
 Clinton avenue from Greene avenue, looking south.
 Putnam avenue from Tompkins avenue, looking east.
 Carroll street from Hoyt street, looking west.
 Third street from Ninth avenue (park), looking west.
 Hancock street from Marcy avenue, looking west.
 Grace court from Hicks street, looking west.
 Washington avenue from opposite No. 283, looking north.
 New York avenue from Prospect place, looking north.
 Clinton avenue from Gates avenue, looking north,
 The large willow and elm in David M. Stone's garden.

(*Brooklyn Daily Eagle*, Wednesday, August 23, 1893.)

Interesting Trolley Correspondence.

The following trolley correspondence is self explanatory :

HEALY TO PARK COMMISSIONER BROWER.

BROOKLYN, August 18, 1893.

SIR :—The trolley wires in front of our residence, 364 Gates avenue, are killing our trees. Cannot something be done before it is too late?

Respectfully,

M. E. HEALY.

The communication was referred to the expert, Professor L. Collins.

COLLINS TO BROWER.

MR. GEORGE V. BROWER, *Park Commissioner* :

DEAR SIR :—The card to you from M. E. Healy of 364 Gates avenue, stating that "the trolley wires are killing the trees," which case you referred to me, has been received. I have examined the trees in front of 364 Gates avenue and find that a small Norway maple tree stands between two silver maples (*acer dasycarpum*). The silver maples are large and meet over the small tree. Some

of the leaves on the small tree are fading. The same state of things exists in many other trees of the same variety in other places and far remote from trolley wires. We have had a very dry summer and the foliage of many trees already begins to mature; certain varieties wither—ripen—sooner than others. I doubt whether the trolley wires in this case have any effect upon the foliage. It would be better to remove the small tree. The two silver maples meet overhead and, as they increase in size, will crowd each other. There is no place for a tree between them. It will be wise for the people to keep watch of the effect of the trolley wires upon the trees. Very truly yours,

L. COLLINS.

Trees for City Streets.

The following letter was sent to a number of firms and specialists in September :

DEAR SIR :—Will you kindly name on the enclosed sheet three trees of large growing sorts, three of medium growing and three of small growing? Please name such trees as you would plant in case you were a resident here and wished to use trees of different sizes upon streets of different widths. Please name them in order of excellence. The soil of Brooklyn is a sandy loam mixed more or less with gravel and rests on a substratum of coarse gravel, which affords excellent drainage. The site of Brooklyn formerly was used for agricultural purposes and hence is in very good condition, except where it has been removed or covered by grading. In such places it can be made fertile by removing the poor soil and supplying good in its stead. Extraordinary conditions not to be considered in the selection.

L. COLLINS, *Secretary*.

The following letters and selections of trees have been received in answer to this request. It is with pleasure they are presented to the people of Brooklyn. It will be seen that the list of names includes none but such as are competent to judge wisely upon the subject of arboriculture from various standpoints. The list is composed of nurserymen who rank among the best; of landscape architects who are masters in the profession; of practical arboriculturists of acknowledged merit, and of private citizens whose taste has led them to devote much time and study to the subject. It is interesting to note the difference in the selections of trees and the different views of the same tree. The names attached to these selections and opinions will command respect.

MEEHAN'S NURSERIES, }
PHILADELPHIA, September 13, 1893. }

DEAR SIR :—We have pleasure in answering your questions to the best of our ability. We must confess, however, that it is a

difficult matter to make out such a list as you request, and if we had it to do over again a week or so later it is just as likely as not the list would be entirely different, as our idea on the subject might change as we viewed the trees in a different light.

In making up the list, even some of the trees named as medium growers will make large trees in time, but not so soon as those named in the first list.

Of course in planting trees you can scarcely make the soil too rich, and much of the growth of the tree would depend upon this. We generally recommend the displacement of a large quantity of soil when the tree is planted, as being scarcely secondary to the necessity of good soil. A tree will recover the ill effects of transplanting and grow much better if the earth has been disturbed. It is too much like planting them in a tub when small holes are dug.

Very truly, THOMAS MEEHAN & SONS.

Large Trees :—1. *Quercus rubra* (Red Oak). 2. *Acer saccharinum* (Sugar Maple). 3. *Liriodendron tulipifera* (Common Tulip Tree or Tulip Poplar).

Medium Trees :—1. *Quercus palustris* (Pin Oak). 2. *Acer platanoides* (Norway Maple). 3. *Fraxinus excelsior* (European Ash.)

Small Trees :—1. *Liquidambar styraciflua* (Sweet Gum). 2. *Magnolia acuminata* (Cucumber Tree). 3. *Acer pseudo-platanus* (European Sycamore Maple).

READING NURSERY,
READING, Mass., September 26, 1893. }

DEAR SIR :—Your letter was duly received. * * * To answer your inquiry I would state that my personal ideas of the comparative merits of trees for street planting are as set forth in the accompanying list. In making this selection of sorts many kinds have to be totally ignored because of some natural defect of habit of growth, lack of great longevity, peculiar and bad structural features, *i. e.*, lack of strength to withstand high and unusual winds or liability to seemingly incurable disease. Then, again, some sorts are highly recommendable except for some feature of flowering or fruiting, which proves too strong a temptation for the "small boy" so irrepressible. When I have quoted more than one sort in the same class it is because the comparative merits of the sorts are so alike it is quite impossible to say which is best.

Yours truly, J. W. MANNING.

Large Trees :—1. *Ulmus Americana* (American Elm). 2. *Fraxinus Americana* (White Ash), or *Castanea Americana* (American Sweet Chestnut). 3. *Populus monilifera* (Cottonwood).

Medium Trees :—1. *Acer saccharinum* (Sugar Maple), or *Acer platanoides* (Norway Maple). 2. *Tilia Americana* (American Linden). 3. *Quercus coccinea* (Scarlet Oak), or *Catalpa speciosa* (Showy Catalpa).

Small Trees :—1. *Negundo fraxinifolium*, also called *Acer negundo* (Negundo Maple, Box Elder). 2. *Betula papyracea* (Canoe Birch). 3. *Salix pentandra* or *laurifolia* (Bay or Laurel Leaved Willow).

KISSENA NURSERIES,
FLUSHING, N. Y., September 13, 1893. }

DEAR SIR :—Yours of the 7th inst. received and contents noted. Complying with your request we herewith give you our selection of the trees for the purposes intended.

We would remark that there might be other trees just as suitable as those we have named, but for general planting we believe they are among the best. Yours truly,

PARSONS & SONS CO.

Large Trees : 1.—*Acer platanoides* (Norway Maple). 2. *Tilia Europea* (Lime, or European Linden). 3. *Quercus rubra* (Red Oak).

Medium Trees :—1. *Acer Platanoides* var. *Schwerdlerii* (Schwerdler's Norway Maple). 2. *Acer dasycarpum* var. *Weirii* (Weir's Cutleaved Silver Maple). 3. *Koelreutera paniculata* (*Koelreutera*).

Small Trees :—1. *Salix pentandra* or *laurifolia* (Bay or Laurel Leaved Willow). 2. *Quercus phellos* (Willow-leaved Oak). 3. *Celtis occidentalis* (Nettle Tree, Hackberry).

Mr. Parsons adds that "for parks and open spaces, village streets or country roadsides the following trees are very valuable. There is nothing finer than the European Beech :"

Fagus sylvatica (European Beech) ; *Tilia Europea argentea* (Silver Leaved Linden) ; *Tilia Europea alba pendula* (Silver Leaved Weeping Linden) ; *Liquidambar styraciflua* (Sweet Gum Tree or Bilsted) ; *Liriodendron tulipifera* (Tulip Tree) ; *Castanea Americana* (American Chestnut) ; *Fagus ferruginea* (American Beech) ; *Acer saccharinum* (Sugar Maple) ; *Carpinus Americana* (American Hornbeam) ; *Salisburia adiantifolia* (Maidenhair Tree, or Gingko).

MOUNT HOPE NURSERIES,
ELLWANGER & BARRY, Proprietors. }
ROCHESTER, N. Y., October 21, 1893. }

DEAR SIR :—In reply to yours of the 18th inst. we would state that according to our experience and observation the American Elm is the best tree for street planting that we have ; next comes the Sugar Maple, then the Norway Maple. The Elm is a very long-lived tree, always vigorous and healthy, generally free from insects, though in some places latterly the Elm has been attacked by the caterpillar. The Maples are large growing, handsome,

vigorous trees with fine foliage, and can be specially recommended. The Silver Maple is very largely used as a street tree, and in soils where it does not grow too rankly is quite desirable, in fact, its rapid growth makes it very valuable, but it sometimes gets injured in storms and hence has not the same value as the Sugar or Norway, still where one desires to have shade and rapid growth it is the tree.

Another tree now being used quite largely and valued on account of its rapid growth is the Carolina Poplar. It is a tall growing tree and has very large, clean leaves, and makes a most remarkable growth. There is no tree that we know of that grows so rapidly and luxuriantly, and it is therefore especially valuable for immediate effects.

Regarding medium and small growing trees, we hardly think the lists can be arranged in the way you desire for street planting. In our opinion, for the street, large tall growing and spreading trees are needed. Now, if you insist upon a list of medium sized trees, we would name as in the accompanying list; also for small-sized trees:

The Cut-leaved Weeping Birch is a most beautiful tree for avenues and produces a unique effect, distinct and different from most plantings that we see nowadays. We know of one avenue planted in this way and the result is most satisfactory.

One of the most beautiful trees of recent introduction is the Weir's Cut-leaved Maple. We introduced this tree several years ago and the more we see of it the more we are impressed with its beauty. It is a variety of the Silver Maple; the branches droop gracefully to the ground; the foliage is deeply cut. Planted either singly or in rows as a street tree, it produces a most admirable effect. There are now in different places large specimens of this tree and they invariably command the admiration of all observers. It is a tree that cannot be too strongly recommended for planting in door yards, around the lawn, in pleasure grounds, parks, cemeteries, in fact everywhere.

Yours truly,

ELLWANGER & BARRY.

Large trees:—1. *Ulmus Americana* (American Elm). 2. *Acer platanoides* (Norway Maple). 3. *Ulmus montana* (Scotch Elm).

Medium Trees:—1. *Tilia Europæa* (European Linden). 2. *Betula alba* var. *pendula laciniata* (Cut-leaved Weeping Birch) 3. *Acer dasycarpum* var. *Wierii laciniatum* (Wier's Cut-leave Silver Maple).

Small Trees:—1. *Catalpa speciosa* (Hardy Catalpa). 2. *Acer platanoides* var. *Reitenbachii* (Reitenbach's Norway Maple). 3. *Æsculus hippocastanum* var. *rubicunda* (Red Flowered Horse Chestnut).

COMMERCIAL NURSERIES,
W. S. Little & Co., Proprietors,
ROCHESTER, N. Y. September 11, 1893. }

DEAR SIR : We inclose herewith your list of questions answered to the best of our ability.

The Lombardy and Bolleana Poplars, though growing to a great height, are peculiarly adapted to narrow streets by their upright, spire-shaped habit of growth. Yours truly,

W. S. LITTLE & CO.

Large Trees:—1. *Acer dasycarpum* (Silver Leaved Maple). 2. *Ulmus Americana alba* (American White Elm). 3. *Platanus orientalis* (Oriental Plane Tree).

Medium Trees:—1. *Populus fastigiata* or *dilatata* (Lombardy Poplar). 2. *Liriodendron tulipifera* (Tulip Tree, Whitewood). 3. *Sorbus aucuparia* (European Mountain Ash).

Small Trees:—1. *Sorbus aucuparia* var. *quercifolia* (Oak-leaved Mountain Ash). 2. *Salisburia adiantifolia* (Ginkgo, Maiden-hair Tree). 3. *Populus alba* var. *Bolleana* (Bolleana Poplar).

SHADY HILL NURSERIES,
CAMBRIDGE, Mass., September 16, 1893. }

DEAR SIR : In answer to your letter of the 14th inst. we return the sheet marked as indicated, with the trees which in our judgment are the best in the classes named. There might be some doubt as to the *Virgilia*, on account of its slow growth, but there are some trees here in Cambridge, planted by the late Asa Gray, which bear out our judgment as one of the finest medium size trees for general use. Yours truly, E. L. BEARD, *President*.

Large Trees:—1. *Ulmus Americana* (American Elm). 2. *Tilia Europæa* (European Linden). 3. *Quercus palustris* (Pin Oak).

Medium Trees:—1. *Acer saccharinum* (Sugar Maple). 2. *Acer dasycarpum* (Silver Maple). 3. *Populus monilifera*. (Carolina Poplar, or Cottonwood).

Small Trees:—1. *Acer platanoides*. (Norway Maple). 2. *Virgilia lutea*, synonym. *Cladrastis tinctoria* (Yellow Wood). 3. *Æsculus hippocastanum*. (Common Horse Chestnut).

MORRISVILLE NURSERY.
MORRISVILLE, Bucks Co., Pa., Sept. 9, 1893. }

ESTEEMED FRIEND : In response to thy favor of the 7th inst. I suggest a few names as requested. SAMUEL C. MOON.

Large Trees:—1. *Quercus alba* (White Oak). 2. *Platanus orientalis* (Oriental Plane Tree). 3. *Liquidambar styraciflua* (Sweet Gum, or Bilstead).

Medium Trees:—1. *Salix pentandra* or *laurifolia* (Bay or Laurel-leaved Willow). 2. *Æsculus hippocastanum* (Common Horse Chestnut). 3. *Fagus sylvatica* var. *heterophylla* (Fern-leaved Beech). Or, if too large, then *Magnolia conspicua* (Yulan, or Chinese White Magnolia).

Small Trees:—1. *Andromeda arborea*, syn. *Oxydendron arbo-reum* (Sorrel Tree). 2. *Cerasus padus* (Bird Cherry). 3. *Cornus florida* and *rubra*, alternately (Dogwood).

By some mischance it so happened that Mr. William Saunders did not understand for what purpose the selection of trees was designed. He made a selection for "good-sized lawns or small parks." Upon being informed of the particular use to which the trees were to be put, he made a second selection for streets in Brooklyn.

OFFICE OF THE SUPERINTENDENT OF GARDENS }
AND GROUNDS, }
WASHINGTON, D. C., September 21, 1893. }

DEAR SIR:—It is impossible to make out a list as wanted without knowing something about what the trees are for, whether for large or small lawns, street trees or other purpose. The accompanying selection is for good-sized lawns or small parks.

Yours very respectfully, WILLIAM SAUNDERS.

Mr. Saunders' selection for good-sized lawns or small parks:

Large Trees:—1. *Acer saccharinum* (Sugar Maple). 2. *Magnolia acuminata* (Cucumber Tree). 3. *Quercus rubra* (Red Oak).

Medium Trees:—*Acer platanoides* (Norway Maple). 2. *Cladrastis tinctoria* (Yellow Wood). 3. *Betula alba laciniata* (Weeping Cut-leaved Birch).

Small Trees:—1. *Acer polymorphum* (Japan Maple). 2. *Acer Pennsylvanicum* or *striatum* (Moose Wood). 3. *Magnolia conspicua* (Yulan, or Chinese White Magnolia).

Mr. Saunders' selection for streets:

Large Trees:—1. *Platanus Orientalis* (Oriental Plane Tree). 2. *Tilia Americana* (American Linden). 3. *Quercus coccinea* (Scarlet Oak).

Medium Trees:—*Acer saccharinum* (Sugar Maple). 2. *Salisburia adiantifolia*, or *Ginkgo biloba* (Maidenhair Tree). 3. *Quercus palustris* (Pin Oak).

Small Trees:—1. *Acer platanoides* (Norway Maple). 2. *Catalpa speciosa* (Western Catalpa). 3. *Koelreutera paniculata* (Koelreutera).

DEPARTMENT OF PARKS,
OFFICE OF GENERAL SUPERINTENDENT,
BROOKLYN, September 26, 1893.

DEAR SIR:—I am deeply interested in the good work of your Society and will do all I can to help it on.

I have filled out the list with as good trees as I know, although I could write another equally as good with other varieties. It is easier to fill a large list than a small one. I know all of these trees have done well in Brooklyn, but trees, like men, do not act equally well in all situations. Yours truly and respectfully,

JOHN DE WOLF, *Superintendent*.

Large Trees:—1. *Tilia Europæa* (Lime or European Linden).
2. *Platanus orientalis* (Oriental Plane Tree). 3. *Acer saccharinum* (Sugar or Hard Maple).

Medium Trees:—1. *Acer pseudoplatanus* (English Sycamore Maple). 2. *Ailanthus glandulosa* (Tree of Heaven). 3. *Acer rubrum* (Scarlet or Swamp Maple).

Small Trees:—1. *Cladrastis tinctoria* or *Virgilia lutea* (Yellow Wood). 2. *Betula alba* var. *laciniata pendula* (Weeping Cut-leaved Birch). 3. *Salix pentandra* or *laurifolia* (Bay or Laurel-leaved Willow).

A. S. FULLER.

RIDGEWOOD, BERGEN Co., N. J., Sept. 25, 1893.

DEAR SIR:—Your questions in regard to street trees are somewhat difficult to answer owing to the varying conditions to which trees must be subjected. You have probably discovered that Elms are no longer admissible under any circumstances, owing to the prevalence of the imported elm leaf beetle, which does not spare any species or variety of the Elm, whether under cultivation or growing in their native habitats in our forests. Then the Soft Maples must be rejected on account of the cottony scale, and the Lindens on account of the linden borer which a few years since destroyed all of the old lindens planted in the streets of Philadelphia. Not only noxious insects, but difference in soils, cuts into our list of desirable or ornamental trees, and the man who selects and plants trees should take all these things into consideration if he would make a success of his work. For instance, the Kentucky Coffee Tree (*Gymnocladus*) is a grand tree and grows rapidly in a moist, rich soil, but is worthless on a dry one, and the same is true of the Beech in all its species and varieties; consequently, before making out a list of trees for a street or park I would want to know something of the nature of the soil, exposure, climate, and whether any and all of them had insect enemies at hand ready to attack them as soon as planted. The Catalpas and Paulownia are beautiful medium-sized trees, but will go all to naught if placed on a hill where the winds have a full sweep. So I put my mark on your list with many mental reserves, ifs and
18.

Yours truly, A. S. FULLER.

Large Trees:—1. *Acer saccharinum* (Sugar Maple). 2. *Liriodendron tulipifera* (Tulip Tree or Whitewood). 3. *Liquidambar styraciflua* (Sweet gum or Bilstead).

Medium Trees:—1. *Acer platanoides* (Norway Maple). 2. *Magnolia tripetala* (Umbrella Tree) ; or, *Magnolia acuminata* (Cucumber Tree). 3. *Acer negundo*, or *fraxinifolium* (Ash-leaved Maple or Negundo).

Small Trees:—1. *Betula papyracea* (Paper or Canoe Birch), small in dry places. 2. *Quercus rober pedunculata* var. *concordia* (Golden Oak). 3. *Salix pentandra* or *laurifolia* (Laurel-Leaved Willow).

OLMSTED, OLMSTED & ELIOT. }
BROOKLINE, MASS., September 13, 1893. }

DEAR SIR :—I have received your letter of the 7th inst. Your Society has undertaken an extremely difficult duty. I have frequently examined a long row of street side trees, not one of which failed to show the effect of serious above-ground injuries, and it rarely occurs that such trees are planted under conditions below the surface of the ground that would justify an expectation of their long continued heavy growth. As a rule, they are practically set in little cups of soil, beyond the circumference of which their roots grow with difficulty and find but scanty nourishment. Consequently, they are of feeble constitution and fall a ready prey to insects and diseases. I must add that a considerable proportion of the trees planted in our cities are sooner or later killed outright by illuminating gas.

If you wish to see an illustration of the difference between trees fairly well planted and those planted under the direction of men not much more than usually well informed on the subject, compare those which are to be seen in Fifth avenue, New York City, with those to be seen on Fifty-ninth street adjoining the Central Park. More than half of all the trees originally planted on Fifty-ninth street have died and been replaced by others. Many of them have been twice or thrice replaced. Of some hundred trees planted about twenty years ago on One Hundred and Tenth street and other streets bordering on Morningside Park, New York, every one has died or been removed because of its diseased or dilapidated condition, and replaced by another.

Not one tree in a hundred of all that may have been planted in the streets of our American cities in the last fifty years has had such treatment that its present condition can be supposed to indicate what a tree of the same species would come to be if properly planted and cared for.

For this reason I am not prepared to answer your inquiries with absolute confidence, but I am inclined to think that if, in the streets of Brooklyn, a sufficient amount of suitable soil could be provided and judicious management secured, satisfactory results would be obtained by planting the broadest streets and places with

the first class in the accompanying list ; the narrower streets with the second class, and the more confined spaces with the third class. I have observed all these except the Buckeye growing less badly in Brooklyn than street trees generally do, and have formed my opinion of the Buckeye from an observation of its growth in other places. I am, dear sir, respectfully yours,

FRED. LAW OLMSTED.

Large Trees:—1. *Platanus orientalis* (Oriental Plane). 2. *Liquidambar styraciflua* (Sweet Gum or Bilstead). 3. *Acer platanoides* (Norway Maple).

Medium Trees:—1. *Æsculus glabra* (Ohio Buckeye). 2. *Ulmus montana* (Scotch Elm). 3. *Celtis occidentalis* (Nettle Tree, Hackberry).

Small Trees:—1. *Acer campestre* (English Field or Cork-barked Maple). 2. *Koelreutera paniculata* (*Koelreutera*). 3. *Cornus florida* (Flowering Dogwood).

DEAR SIR:—The following is a list of trees that will do well in Brooklyn. I think they are best for street work. Yours truly,

H. M. PRATT.

Large Trees:—1. *Acer dasycarpum* (Soft, White or Silver-leaved Maple). 2. *Tilia Americana* (American Linden or Basswood), *Fraxinus alba* (American White Ash). 3. *Ulmus Americana* (American Elm).

Medium Trees:—1. *Acer platanoides* (Norway Maple). 2. *Quercus palustris* (Pin Oak). 3. *Tilia Europœa* (Lime or European Linden).

Small Trees:—1. *Salix pentandra* (Bay or Laurel-leaved Willow). 2. *Acer rubrum* (Scarlet or Swamp Maple). 3. *Phellodendron Amurense* (Chinese Cork Tree).

NEW FOREST, WOOD'S HOLL, MASS., }
September 24, 1893. }

DEAR SIR:—The objects of your society seem to me among the most important in a city, and I should be glad if I could assist in the plans for tree planting.

I am glad to see that you propose to use a variety of trees. The mistake is often made in towns and cities of planting the same species of trees in all places, whether the streets and walks be narrow or broad, well sunned or much shaded. I am sure your plan of trees of three sizes will give you the best results, and these are best obtained where proper distances can be preserved between the trees. Often trees are much too near each other. Forty to fifty feet apart for the first class, the largest trees, thirty-five to forty feet for the second class and twenty to thirty feet for

the third class would be the best distances, if you have plenty of time and patience to await shade, little of which could be obtained under ten years.

With best wishes for your success in a laudable undertaking, I am very sincerely yours,

JOSEPH STORY FAY.

Large Trees :—1. *Ulmus Americana* (American Elm). 2. *Acer platanoides* (Norway Maple). 3. *Quercus alba* (White Oak).

Ulmus suberosa (Dutch or Cork Barked Elm) is well adapted for windy places. *Tilia Europæa* (Lime or European Linden) is a fine tree, but makes an untidy sidewalk in time of blossoming and seeding.

Medium Trees :—1. *Catalpa speciosa* (Hardy Catalpa). 2. *Robinia pseudacacia* (Yellow Locust). 3. *Acer dasycarpum* (Silver Maple).

Small Trees :—1. *Celtis occidentalis* (Nettle Tree, Hackberry). 2. *Cladastri tinctoria* or *vigilea lutea* (Yellow Wood). 3. *Crataegus* in variety (English Flowering Thorn).

BUFFALO'S PARK COMMISSIONER, }
OFFICE OF THE PARK COMMISSIONERS, }
BUFFALO, N. Y., September 27, 1893. }

DEAR SIR:—The accompanying list might be made up with others just about as good, if rich soil and ample moisture could be secured, such as Tulip, American Elm, Balsam Poplar, Sycamore, Maple, Red Oak, Basswood, Catalpa, *Cladrastis* and *Pavia*. I would like to recommend the *Ailanthus*, in spite of the ill smell of its flowers, which of course lasts only two or three days. No other tree will do so well under the trying conditions of a thickly settled street. Your gravelly porous subsoil is especially favorable to it. The European Horse Chestnut does not thrive in light gravelly soil, because the foliage gets burned early in the season if the weather be dry. They are objectionable because of the damage done by boys in nutting time. The Sugar Maple will thrive in a drier soil than the Silver Maple, but it is more sensitive to smoke and dust and so more liable to fungus. It is rapidly dying in our Buffalo streets wherever the smoke nuisance prevails. The Poplars possess this merit, and also the Oaks and the Tulip Tree, but these latter have to be planted very young and cared for with good judgment until well established. The Tulip must have rich soil and porous subsoil, but the larger native Oaks, if once well started, will thrive where Elms, Maples, Lindens, Ashes and Tulips would starve. Yet the lot of street trees in general is starvation—almost constant lack of both food and water in sufficient quantities.

Yours truly,

W. McMILLAN, *Superintendent.*

Large Trees:—1. *Platanus orientalis* (Oriental Plane Tree).
2. *Acer dasycarpum* or *eriocarpum* (Soft, White or Silver Leaved Maple). 3. *Populus monilifera* (Cottonwood).

Medium Trees:—1. *Acer saccharinum* (Sugar or Hard Maple).
2. *Ulmus montana* (Scotch or Wych Elm). 3. *Æsculus hippocastanum* (Common Horse Chestnut).

Small Trees:—1. *Æsculus glabra* (Ohio Buckeye). 2. *Acer platanoides* (Norway Maple). 3. *Prunus padus* (European Bird Cherry).

OFFICE OF "GARDEN AND FOREST," }
ROOM 107, TRIBUNE BUILDING, }
NEW YORK, September 12, 1893. }

MR. L. COLLINS :

DEAR SIR :—It is very difficult to advise about the trees to select in a city. The Sugar Maple, the Norway Maple, the Honey Locust, the Oriental Plane, the Tulip Tree are all first rate and so is the White Ash. The Ginkgo does well in Washington and it looks well in Flushing. The Catalpa usually does well, too, but the flowers are so showy that people are tempted to pick them, and in doing so they break the branches. The Red Oak is a first rate street tree and grows rapidly. The Pin Oak is also a good tree, and I think that people, as a rule, make a mistake in not using Oaks more generally in their streets. All the so-called Black Oaks, that is, Oaks with leaves whose lobes are bristle pointed, at least, while young, and whose fruit matures the second year, can be transplanted when they are ten or twelve feet high, and many of them grow very fast. The Willow Oak ought to be a good street tree. The Ash and the Honey Locust have the advantage of leafing out late and thus allowing the sun to reach the street in spring when it is agreeable.

Some of these trees might be considered second-sized trees, although they all attain good proportions after many years. Perhaps the best way would be to plant these large growing trees and then depend on pruning to keep them within bounds, which is the plan usually adopted in Europe. The trouble with what you call third-class trees is that they grow slowly as compared with the first-class trees, and it would require a long time to get them large enough to do as shade trees, while the first-class tree would at the end of a few years be of the size you require, and they could then be kept back to a certain extent by pruning. All street trees ought to be pruned more or less if really good results are to be obtained, and vigorous growing trees stand it better than the smaller and less vigorous ones. With all its defects the Ailanthus is a tree which endures the hardships of city life better than almost any other. To some people the blossoms are very offensive, but nurserymen can propagate them from individuals which bear none of these offensive flowers, or at least, very few of them.

I don't like to be quoted as making any more definite statement than I have made, simply because my knowledge is not adequate. I can't say which of half a dozen trees I would consider the fourth best or the fifth best. Any one of them might be best for a given situation. The soil in Brooklyn varies, and the trees are planted in positions some of which are more exposed to winds than others; some of them are planted in parts of the city where there is more smoke and dust, and there such kinds as the Ailanthus would be best. I have seen only a very few Oaks growing in cities, but those which I know are doing very well. It is the same with the Tulip Tree. I know of several in Jersey City which are thriving remarkably. I could name several other trees which are rarely mentioned as street trees and of which I know only individual examples in cities. I pass every day a fine specimen of Celtis or Hackberry. It is right on the border of a cut through which steam cars run, and it is exposed in this way to volumes of smoke; but it is a beautiful and healthy tree of medium size, and I am by no means sure that it would not be just as good as an Elm, which it resembles in form. I know also three Sassafras trees, which, as you know, are comparatively small, and which are singularly beautiful. They stand on the sidewalk and the street is closely paved.

You can very readily see that there is no such thing as a best tree or a second best for a whole city. In some places where there are very deep cellars and the houses stand close together the water drains quickly out of the ground, and only trees will live which can endure drought well. There are other streets where a close pavement shuts out the water and makes peculiarly hard conditions for trees. The fact is that we have very much to learn not only about the varieties of trees to use in our streets, but about the way of caring for them, and until we are willing to watch them as closely as they do in Paris and other European cities we can never expect to have good ones.

The more I learn of trees and their ways the less disposed I am to dogmatize. If I were planting so large a city as Brooklyn, I certainly should study the conditions and make trial of a great many different kinds, for even among those which flourish well there is a choice for different locations. The Ginkgo, for example, will give no shade for years; ultimately, however, it becomes umbrageous, and I would certainly give it a fair trial.

I remain yours, very truly,

W. A. STILES.

[*Brooklyn Eagle*, September 20, 1893.]

Fall Tree Planting.

SUGGESTIONS FOR THE PUBLIC FROM THE SECRETARY OF THE SOCIETY.

The following address has just been issued.

To the Citizens of Brooklyn :

The season for fall planting of trees is fast approaching. It is time to plant as soon as the leaves have fallen. What varieties of trees shall be planted and where they shall be located are important questions. Few people have sufficient knowledge of trees to enable them to judge wisely either as to the selection of varieties to plant or the choice of locations. It requires more attention than people ordinarily are disposed to give to gain such knowledge, and besides, a large class take no interest in arboriculture. People who are well versed in the subject differ widely in selection and arrangement. We call it a difference in taste. In the event of a difference in opinion who shall decide? Perhaps it will be well to conclude that when a single individual is interested, that one has a right to decide without consultation with another. Where several are interested all should have a voice. As to trees in streets it appears that they are, in a degree, public property. In so much the people should be considered. This view of the subject leads to the following suggestions, not with the expectation that they will be accepted and acted upon, but rather that they may serve as a formal expression that will call forth discussion, which ultimately will produce the best results. The varieties of trees to be planted will not be considered here. A paper on that subject is in preparation and in due time will be given to the public.

General Arrangement of Trees.

At street intersections, when practicable, place eight trees of large growing sorts, two trees on each corner, each tree, as nearly as may be, on the tree line of one street and on the fence line of the other street. The tops of these trees, properly trained, will be high above all awnings and lights, and in time will form a groined arch over both streets. This clump will form a dense shade where it will do the greatest good and least harm. As the trees grow the lower limbs may be removed until there is a clean

shaft twenty feet high. The space under the trees will be high, light and airy, and shady. Should any branch approach too near a building it may be removed. One can hardly realize the beauty and utility of such an arrangement without seeing it. In hot days the shade will be very acceptable to those waiting for cars. It will be very pleasant for friends and acquaintances meeting on the corners. For children in their sports these will be delightful retreats. People can cross the streets in the shade of this canopy. These places, which in hot days are like furnaces heating the air, will be changed into a cooling shade. These clumps of sturdy trees supporting one another will form barriers to high winds and protect single trees and property in general.

Between Street Intersections.

Let each block be treated as a unit. If the street is narrow and the buildings are flush with the building line, small growing trees should be used. If the street is of medium width and the buildings are set back a little from the building line medium sized growing trees may be used. If the street is wide and the buildings set well back from the building line large growing trees may be used. It may be remarked that there are varieties of trees that may be kept within almost any desired bounds by pruning. This subject will be treated at another time. In all cases trees should be placed so far from each other that they will not meet at maturity. These distances will vary from twenty to eighty feet. To determine the distances to intervene between trees measure the spread of full grown trees of the varieties to be planted and let this measure be taken, increased five or ten feet. It is better that trees should alternate on opposite sides of the street. Healthy, well selected trees thus located, if properly set and cared for, including pruning by an expert from year to year, which is a simple matter and inexpensive when blocks are managed as a whole, will develop in their natural grace and luxuriance and each particular tree will become a thing of beauty, a delightful object. They will be vigorous and withstand the attacks of insects and diseases caused by fungus growth. A sickly tree becomes easy prey to its enemies.

With this arrangement of trees architecture will show to the best advantage. The sun will shine on the ground under and between the trees a part of every sunny day. Grass may be made to grow on all spaces not covered with pavements or flagging, and

damp, unhealthy places will not exist. Where practicable, let strips of well-selected grass be placed on each side of the walk, and let it be kept closely shaven; the lawn mower makes this easy. Let courtyards be covered with well-kept grass and an occasional flower or foliage plant in pots or boxes be set on steps, piazzas, window sills, or any convenient place, taking care to use them sparingly; let bare, unsightly walls be covered with a creeping vine. With these elements, all inexpensive and within easy reach, our city may be made a delightful place.

All within the fence line should be attended to by the residents on the premises; all between the fence and curb line by a block club, composed of the residents on the block; all between the curb lines by the city authorities. All this being well done the whole city will be well cared for. Impossible? By no means. Greater changes than these await us in the near future. This is an era of progress. Brooklyn should be the queen city of America.

[*Brooklyn Daily Eagle, Saturday, November 18, 1893.*]

Wires and Trees.

The following correspondence in regard to electric wires and trees will be found interesting:

FROM SUPERINTENDENT STERLING.

BROOKLYN, November 16, 1893.

L. COLLINS, ESQ.,

Secretary Tree Planting and Fountain Society:

DEAR SIR:—The telegraph companies have been putting guy wires for their poles on the trees in different sections of the city. I have just had one removed from in front of 110 St. James place. I wish your society would assist me in having it stopped, by notifying them to have all wires removed from the trees, and to discontinue putting up any more, or they would be prosecuted. We have already done so. Yours truly,

GEORGE H. STERLING,
Superintendent of Streets.

FROM SECRETARY COLLINS.

THE TREE PLANTING AND FOUNTAIN SOCIETY OF BROOKLYN, }
 November 17, 1893. }

MR. GEORGE H. STERLING,

Superintendent of Streets :

DEAR SIR :—Your very interesting letter of the 16th inst. has been received. I have sent it to the president, Mr. A. A. Low, and will advise you later of the action of the Society. I may say at this time that within the last six months, upon the suggestions of the president, letters have been sent to the mayors of all cities of the United States whose population exceeds 20,000 and to all capital cities, requesting a copy of such ordinances as are in force bearing upon the subject of arboriculture in streets. About one hundred answers have been received. All have cheerfully granted the request. The Society, therefore, has in its possession a large amount of information upon this subject. It has an attorney engaged in preparing a list of ordinances now existing, relating to arboriculture in Brooklyn, and of the acts of the legislature of the State of New York, bearing upon the same subject. It is the design of this Society to clear away the rubbish, find out just what the law is, compare it with ordinances upon the same subject in other cities, ask that additions or changes may be made, if deemed desirable, provide means whereby the people may be made acquainted with the law, and then, after due deliberation and patient waiting, and careful and frequent admonitions that the people may know what action is in contemplation in order that no one may be taken by surprise, for when all this has been accomplished this Society hopes, by deserving the confidence of the people, to be supported by them to such a degree that an irresistible warfare may be waged against all who violate the ordinances relating to trees and arboriculture in the city of Brooklyn. This Society has other matters of equal importance in preparation and it is greatly encouraged by the friendly expressions received from the city authorities whenever any of these things have been made known to them. The future for arboriculture in this city is very bright. Time and the co-operation of citizens are necessary to successful results. It is with pleasure I acknowledge this, the third expression of your interest in arboriculture. Your standing and influence among your fellow citizens will enable you to materially aid in beautifying to a still higher degree this already beautiful city.

Very respectfully,

L. COLLINS, *Secretary.*

[From the *Brooklyn Daily Eagle*, November 22, 1893.]

Protecting Trees.

To the Editor of the Brooklyn Eagle:

At a late meeting of the trustees of The Tree Planting and Fountain Society the Secretary presented the following correspondence. The board was so well pleased with the spirit manifested by the railroad officials that, upon motion by Mr. Henry Hentz, the Secretary was requested to hand the correspondence to the press. The tree received attention the following morning :

L. COLLINS,

Secretary Tree Planting Society.

THE COMPLAINT.

BROOKLYN, N. Y., November 9, 1893.

PROFESSOR L. COLLINS,

Brooklyn, N. Y. :

MY DEAR SIR:—For some weeks past I have been boarding temporarily at 432 Gates avenue, in this city, pending the completion of my house in New Jersey. This morning my attention was called to the fact that a large tree standing in front of the house is being seriously harmed by reason of the feed wires of the trolley system pressing against and eating into the trunk of the tree. I am informed that two weeks ago a lineman of the railway company passed up the street placing insulators upon such trees as were being harmed by the proximity of the feed wires; but, owing to some complications in the case of this particular tree, he was unable to afford it the needed protection and took his departure. The lady who owns the house called to him and asked why he had not completed the necessary arrangements for protecting the tree, and was informed that he would return as soon as he could secure some other needed appliances and complete the work, adding that the tree was "terribly charged." This was two weeks ago, and we fear the tree will be destroyed unless it is attended to promptly. I am not aware that your society is directly interested in these matters in which the railway company is immediately concerned, but I apprehend that you are at least indirectly interested, and may know of some way by which this matter may receive the attention it most certainly deserves. I should be pleased to receive information from you as to what steps I should take in the premises; or, if not too great an inconvenience to you, I should like to have this letter placed where it would operate to bring about the desired result. I remain, with great respect, very truly yours,

ALBERT H. HOWE.

THE ENGINEER'S LETTER.

THE BROOKLYN CITY RAILROAD COMPANY, }
 November 10, 1893. }

PROFESSOR L. COLLINS,

44 Court street, Room 32, Brooklyn, N. Y.:

DEAR SIR:—Your favor of November 9, inclosing letter of Albert H. Howe, has been referred to me by President Lewis. I will have this matter investigated at once and will communicate the result to you within a few days. We certainly can protect this tree from any harm which might be caused to it by any of the feeder wires of our system, and shall only be happy to do so. The probabilities are that the trouble is caused by the negligence of some of our men, who should have properly protected it when they went over the lines insulating other trees. I inclose letter as requested. Yours very truly,

M. G. STARRETT,

Chief Engineer.

UNITED STATES DEPARTMENT OF AGRICULTURE, }
 DIVISION OF FORESTRY, }
 WASHINGTON, D. C., Dec. 21, 1893. }

L. COLLINS,

*Secretary of The Tree Planting and Fountain Society,
 No. 44 Court street, Brooklyn, New York :*

DEAR SIR :—I have your letter regarding an answer to your queries with reference to the best trees to be selected for street planting.

You have given me the advantage over your other correspondents in letting me see their answers. From these it must have become apparent to you that your question in the form in which it is given cannot be answered categorically with the expectation of accomplishing what you seem to aim at, namely, to give the citizens of Brooklyn a standard list of trees from which an intelligent choice for street planting may be made.

Feeling in the matter as Mr. Stiles does, I shall not undertake to make as narrow a choice as you desire, but in order to assist your good work I subjoin a table giving a list of trees with a rating for their various qualities on which their choice for street planting must depend.

The conditions for street planting are under the best circumstances unfavorable, hence, only trees which possess *endurance*, *i. e.*, capacity to thrive in more or less uncomfortable positions, as regards soil, soil-moisture, atmosphere, resistance to damage by storms, etc., should be chosen. Being subject to injury from abuse or accident their *recuperative power* is of moment, by which they heal wounds, readily replace broken leaders and branches or outgrow other injuries.

Given these two essential qualities we would next look to *clean* habits ; the continued dropping of litter, which is a habit of some trees, or their liability to insect pests, or else their tendency to sprout from the roots make them a nuisance and undesirable. *Beauty of form* or foliage is possessed by most trees at some period of their life, but whether this beauty is more or less persistent should influence the choice and a rating in that respect may well be made. Trees being planted for *shade*, the degree of such shade is a matter of consideration ; in this direction a change takes place with age, some trees growing less shady with years. Sometimes it may be desirable for special reasons to select a less shady, more open kind. In this connection it is also of import-

ance to note the earliness of the *leafing* and the length of time the foliage remains in the fall.

Rapid effect being sometimes a first consideration, the *rapidity* of growth must be noted, but rapidity of growth usually is a sign of short life, hence where the planting is to be of a permanent character *persistence, i. e.*, long life, is a desirable quality. That this quality runs somewhat parallel with that which we have called "endurance," namely, resistance to injurious influences, goes without saying. Finally, the *size* which trees are apt to attain may make them undesirable for confined places. In this respect, however, soil will make often a difference, just as climate does, the same species behaving differently in different situations. The classification in three height classes is made according to the usual behavior of the species, taking also into consideration the unfavorableness of position in streets.

In the subjoined table such trees as were recommended by your various correspondents and appear to me admissible for choice, with a few others added have been rated on the eight points which *at least* should find consideration in the choice of a street tree.

Since the list contains only trees which are properly used for street trees, the scale for rating has been taken as low as 3; an absolute absence in any one point being denoted by 0, while special excellence is denoted by a + sign. The addition of ratings on all points should give the relative position of the tree in the list, all points considered.

Hoping to have better aided your constituents in this than by simply answering your question, I am, yours respectfully,

B. E. FERNOW, *Chief*.

Rated List of Street Trees for Planting in Brooklyn.

LARGE SIZED TREES.	Total Rating.	Endurance.	Recuperative Power.	Cleanliness.	Beauty and Form.	Shade.	Leaf Period.	Rapidity.	Persistence.
RED OAK (<i>Quercus rubra</i>)	22	3	3	3	3	2	3	2	3
SCARLET OAK (<i>Quercus coccinea</i>).....	22	3	3	3	3	2	3	2	3
YELLOW OAK (<i>Quercus tinctoria</i>).....	22	3	3	3	3	2	3	2	3
AMERICAN ELM (<i>Ulmus Americana</i>).....	22	3	3	2	3	3	3	2	3
SUGAR MAPLE (<i>Acer saccharinum</i>).....	19	2	2	2	3+	3	3	1	3
BLACK MAPLE (<i>Acer nigrum</i>).....	19	2	2	2	3+	3	3	1	3
TULIP TREE (<i>Liriodendron tulipifera</i>).....	19	2	3	2	3	2	2	2	3
EUROPEAN LINDEN (<i>Tilia vulgaris</i>).....	19	2	2	3	3	3	2	2	2
SMALL-LEAVED LINDEN (<i>Tilia microphylla</i>)....	19	2	2	3	3	3	2	2	2
SWEET GUM (<i>Liquidambar Styraciflua</i>)	19	3	3	3	2	2	2	2	2
WHITE OAK (<i>Quercus alba</i>)	19	3	3	2	2	2	2	2	3
BUR OAK (<i>Quercus macrocarpa</i>).....	19	3	3	2	2	2	2	2	3
ORIENTAL PLANE TREE (<i>Platanus orientalis</i>) ...	19	3	3	2	2	2	2	3	2
KENTUCKY COFFEE TREE (<i>Gymnocladus Cana-</i> densis).....	19	3	2	3	2	2	2	2	3
AMERICAN PLANE TREE (<i>Platanus occidentalis</i>).	18	3	3	1	1	2	2	3	3
SYCAMORE MAPLE (<i>Acer pseudo-platanus</i>)	17	2	2	2	2	2	3	2	2
AMERICAN LINDEN (<i>Tilia Americana</i>).....	17	2	2	3	2	2	2	2	2
MEDIUM SIZED TREES.									
RED MAPLE (<i>Acer rubrum</i>)	22	3	3	2	3	2	3	3	3
SHINGLE OAK (<i>Quercus imbricaria</i>).....	21	3	3	3	2	2	3	2	3
WILLOW OAK (<i>Quercus Phellos</i>)	21	3	3	3	2	2	3	2	3
SLIPPERY ELM (<i>Ulmus fulva</i>)	21	3	3	3	2	2	3	2	3
NORWAY MAPLE (<i>Acer platanoides</i>)	20	3	2	2	3+	3	3	2	2
BOX ELDER (<i>Negundo aceroides</i>)	20	3	3	2	2	3	3	3	1

RATED LIST OF STREET TREES FOR PLANTING IN BROOKLYN—Continued.

MEDIUM SIZED TREES.	Total Rating.	Endurance.	Recuperative Power.	Cleanliness.	Beauty and Form.	Shade.	Leaf Period.	Rapidity.	Persistence.
EUROPEAN ELM (<i>Ulmus campestris</i>).....	19	3	3	2	2	2	3	2	2
SCOTCH ELM (<i>Ulmus montana</i>).....	19	2	3	2	2	2	3	2	2
HACKBERRY (<i>Celtis occidentalis</i>).....	19	3	3	3	1	2	3	2	2
SILVER-LEAVED MAPLE (<i>Acer dasycarpum</i>)....	17	3	3	1	1	2	3	3+	1
TREE OF HEAVEN (<i>Ailanthus glandulosus</i>)*....	16	1	2	1	2	2	2	3	3
HORSE CHESTNUT (<i>Æsculus Hippocastanum</i>)..	16	2	1	2	2	2	2	2	3
JAPANESE SOPHORA (<i>Sophora Japonica</i>).....	16	2	2	1	3	2	2	2	2
HARDY CATALPA (<i>Catalpa speciosa</i>).....	16	3	3	2	2	1	1	3	1
GINKGO OR MAIDEN-HAIR TREE (<i>Ginkgo biloba</i>)..	16	3	2	3	1+	1	2	2	2
HONEY LOCUST (<i>Gleditsia triacanthos</i>).....	15	3	3	2	1	1	2	2	1
COTTONWOOD (<i>Populus monilifera</i>).....	15	3	3	1	0	1	3	3+	1
BALM OF GILEAD (<i>Populus balsamifera</i> var. candicans).....	15	3	3	1	1	1	3	2	1
BLACK LOCUST (<i>Robinia pseudacacia</i>).....	14	3	2	1	2	1	1	3	1
SMALL SIZED TREES.									
ENGLISH MAPLE (<i>Acer campestre</i>).....	21	3	3	2	3	2	3	3	2
ROUND-TOP LOCUST (<i>Robinia pseudacacia</i> form)	18	3	3	3	3	2	1	2	1
RED HORSE CHESTNUT (<i>Æsculus rubicunda</i>)..	17	2	1	2	3	2	2	2	3
LAUREL-LEAVED WILLOW (<i>Salix pentandra</i>)....	17	3	3	2	2	1	2	3	1
BAY WILLOW (<i>Salix laurifolia</i>).....	17	3	3	2	2	1	2	3	1
GREEN ASH (<i>Fraxinus viridis</i>).....	16	3	2	3	1	2	2	2	1
EUROPEAN MOUNTAIN ASH (<i>Sorbus aucuparia</i>)..	15	2	2	2	3	2	2	1	1
AMERICAN MOUNTAIN ASH (<i>Pyrus Americana</i>)..	15	2	2	2	3	2	2	1	1
YELLOW WOOD (<i>Cladrastis tinctoria</i>).....	15	1	1	3	3	2	2	1	2

*Questionable in value, on account of smell and root sprouting.

I agree in the general proposition of *Garden and Forest* that it is almost impossible without discussion under each species to get to a conclusion, and that the list offered is only to serve as a first basis from which to begin a selection.

B. E. FERNOW.

[From *The Brooklyn Daily Eagle*, Tuesday, January 30, 1894.]

Trees.

CAN THEY LAWFULLY BE USED FOR ADVERTISING PURPOSES?

To the Editor of The Brooklyn Eagle :

In your issue of yesterday, touching an interview of The Tree Planting and Fountain Society with Mayor Schieren, it is claimed a tree may be used for advertising purposes providing the owner gives his consent. There are two sections of the ordinances of the City of Brooklyn bearing directly upon the use of trees. Article VII., Section 1, says :

SEC. 1. No person except the owner shall cut down, destroy, break, or in any way injure any tree or shrub standing in any street, avenue or public place, unless by direction of the common council or by the board of city works, for the purpose of regulating such street. All trees kept, maintained or cultivated in any of the streets, avenues or lanes of the city shall have the boughs or branches cut or trimmed close to the trunk of the tree at least ten feet above the ground, and it shall not be lawful to keep, maintain or cultivate trees in any of the streets, avenues or lanes of the city excepting in the manner provided in this section.

It appears from this section "the owner" has a right to "cut down, destroy, break or in any way injure any tree" which belongs to him. Section 24 of the same article says :

SEC. 24. No person shall paste, post, paint, print or nail upon any of the curb, gutter or flagstones, trees, lamp-posts, awning posts, horse posts, telegraph poles, barrels, boxes and hydrants in any of the public streets or avenues of this city, any handbill, poster or notice, under a penalty of \$10 for each and every offense.

This section contains no proviso in favor of "the owner." A penalty of \$10 for each and every offense is plainly stated. The reception of the committee by his honor, the mayor, was of such a nature as to inspire confidence in the friends of arboriculture. Perhaps the ordinances are sufficient as they stand. It may be their enforcement is all that is needed. It is easy to believe the citizens of Brooklyn will gladly assist in carrying out the spirit of the laws when they become acquainted with them. The tendency of the law appears to be to give the owners of property the largest liberty consistent with the welfare of the people.

L. COLLINS,

Secretary of The Tree Planting and Fountain Society.

BROOKLYN, January 29, 1894.

ARNOLD ARBORETUM, HARVARD UNIVERSITY, }
JAMAICA PLAIN, MASS., January 2, 1894. }

MY DEAR SIR:—I have read with a good deal of interest the letters you have printed relating to a description of trees, etc., for Brooklyn street-planting, and I have written a short criticism of some of the recommendations, which will appear in due time in *Garden and Forest*. This seems to have been a better plan than writing you personally on the subject. Faithfully yours,

C. S. SARGENT.

L. COLLINS, Esq.,
44 Court street, Brooklyn.

[From *Garden and Forest*, January 17, 1894.]

Street Trees.

Last September Mr. L. Collins, Secretary of The Tree Planting and Fountain Society of Brooklyn, wrote a circular letter to several nurserymen and other experts, asking them to name what they considered the best trees of different sizes to use as shade-trees in the streets of Brooklyn, and the answers which this letter called forth have recently been published in the newspapers of that city.

The trees recommended are, for the most part, suitable for the purpose, although it is curious that only one writer recommends the *Ailanthus*, which is probably the best street tree that has ever been used in northern cities, in spite of the prejudice which exists against it, and which, as is explained in the letters alluded to, can be overcome by planting only pistillate trees. Some of the trees recommended, however, are hardly suitable for street-planting. One writer recommends the European Ash, which is notoriously a short-lived and unhealthy tree here, like the European Sycamore Maple, which is also recommended. The American Chestnut is recommended, but in common with other nut trees, it has the disadvantage of being too attractive to boys, who climb into the branches or mutilate the trees with sticks and stones in their pursuit of the nuts. Nor should we consider the Ash-leaved Maple, although a rapid-growing tree, a desirable inhabitant of our streets; it branches too low, and the branches are too brittle to make it desirable in such situations. Nor is the Canoe Birch, which is recommended, a good street tree, as all the Birches need their lower branches to balance the narrow pyramidal heads, and street trees, of course, cannot be allowed to branch low. *Catalpa speciosa* is also recommended, but, although a hardy and fast-growing

tree, it has the disadvantage of producing such showy flowers that the trees in public places rarely escape mutilation. Nor do we agree with the assertion of one of the writers that "for village streets or country roadsides there is nothing finer than the European Beech." A Beech to be really beautiful must rise in a solid dome of foliage from the grass, and specimens from which the lower branches have been removed are not attractive. One writer recommends the Lombardy Poplar and the variety of the Silver Poplar, known as *Populus Bolleana*, both fastigate trees of rapid growth, but, unfortunately, now practically worthless in this country owing to the attacks of borers, which riddle the trunks. The Mountain Ash, too, is recommended, but the beauty of the too attractive fruit would prove a serious objection to this tree. The Yellow Wood, or *Cladrastis*, is suggested; it is one of the most charming of our native trees, but hardly suitable for a street tree, as it usually branches low, and has one serious drawback in its brittle branches which are often broken by gales. Nor should we have thought of *Magnolia conspicua*, or *Cornus florida*, as desirable street trees, for both produce such showy flowers that it would be impossible to save them from mutilation.

Several of the writers recommend the weeping cut-leaved European Birch, but to this there is the same objection as there is to the Canoe Birch; these trees are beautiful when they grow from the ground as pyramids; they become unsightly and unattractive as soon as the lower branches are removed. The Locust, *Robinia Pseudacacia*, is suggested, but, like the Lombardy Poplar, it is unavailable through the injuries inflicted on it by borers. Most of the writers agree in recommending the Tulip-tree, the Red Oak, the Sugar Maple, the Norway Maple, the Pin Oak—all excellent trees, and, on the whole, perhaps the best large-sized trees available for our streets. The Oriental Plane, which promises to be a valuable tree here, and to surpass in utility the American species, which serious fungal diseases disfigure, is recommended. The Three-thorned Acacia, or *Gleditschia*, and the Kentucky Coffee-tree are both recommended, and both are tough and handsome trees, which have the advantage of leafing out late in the spring, and thus allowing the sun to reach the ground beneath them at a season when it is agreeable.

The selection of trees of the right kind is necessary if a plantation, whether it be in a street or elsewhere, is to be permanently successful, but, after all, a wise selection of material is not the only thing that is needed. It is equally important that an abundant

supply of proper soil should be furnished to each tree, that the trees should be carefully grown in nurseries, frequently transplanted and properly pruned until they attain a proper height for permanent planting. They should be carefully staked as soon as planted and protected against the teeth of horses by some efficient trunk-guard. If street trees are planted as they are in Paris—in such a way that it is possible to supply them freely with water in periods of drought—the success of the plantations will be greater and the life of the trees prolonged. In a city of the size of Brooklyn tree planting can only be properly and economically carried out with the assistance of a municipal nursery, in which trees are specially grown and prepared for the purpose. This plan has been successfully adopted in Paris and in Washington, which pass for the two best-planted cities in the world, and should always prevail where planting on a large scale is to be undertaken.

BOSTON, February 6, 1894.

MR. L. COLLINS :

DEAR SIR :—I received the paper in due season containing the result of your inquiries among the experts in tree culture and was very much interested in it. So much so, indeed, that I went to work and tabulated a little, to get some idea of what were, on the whole, the most popular among the trees mentioned. I send you a copy of the transcript containing what I got at in this way, which may have some interest for you.

Our Boston trees have been much neglected in past years, and need much care and inspection as well as culling out of bad specimens and replacing by new. But our people do not yet take hold generally of the matter as they ought. I am glad to bring the example of Brooklyn's good work to their notice from time to time, and am grateful for the papers you send keeping me informed.

I am with sincere regard, yours very truly,

E. S. FARWELL.

[*Brooklyn Eagle, Saturday Evening, February 24, 1894.*]

Injury to Trees.

The following letter to Secretary Collins of The Tree Planting Society draws attention to a not unfamiliar source of danger to growing specimens :

PROFESSOR L. COLLINS, BROOKLYN, N. Y.

DEAR PROFESSOR :—Not having our customary chat the other night I was unable to ask you in reference to the following, which I have thought of frequently during the past two or three weeks.

As you know, during fine weather I am in the habit of walking

considerably, and have noticed on Van Buren street, Greene and Lafayette avenues many fine shapely trees inclosed in iron tree-boxes many sizes too small. In many cases the trees are growing over the lower rim of the frame, and before long will cut the bark entirely. Are the tree-boxes of any material use? When the trees are very small they are probably a protection from rough treatment, but after they have attained sufficient size to stand an occasional jar, is the iron frame any protection? If they even have a semi-conscious feeling they must, under such conditions, feel that their lines are not cast in very pleasant places.

Yours very truly,

WILLIAM H. HANNAM.

[*Brooklyn Eagle, Tuesday, February 27, 1894.*]

Improvement Clubs.

The success of ornamental improvements, whether by means of arboriculture, horticulture or grass culture, depends almost altogether upon the interest taken by the residents and property owners in the immediate locality. "Our home," "our block," "our street," "our city," are much dearer to us than "your home," "your block," "your street," "your city." If people will carefully consider how much may be gained by local organizations they will avail themselves of the advantages to be derived from them by making preparations for their formation. The organization may comprise a single block, several blocks, a whole street, or several streets, according to circumstances. To insure success a club should have in it as few discordant elements as may be. It will be desirable to have a president, secretary, and treasurer. In some cases, perhaps, it will be better to have other officers. The number should not be increased so much as to endanger success. The president should be "a man of affairs," broad minded, considerate, who knows a great deal about the objects of the organization, and is desirous of learning a great deal more, and who can "get along" with his associates. The secretary should be able to perform the duties of the office promptly and accurately, and he should take a deep interest in the work, not given to "much speaking" and not dogmatic. The treasurer should be a man of integrity, and prompt in attention to the duties of the office. The members should be loyal to the interests of the organization and willing to give time to it as their business engagements will permit. A member should not accept an office unless he is prepared to attend to its duties; he should not accept a place on a committee unless he is prepared to perform the duties devolving on him in such committee, nor

should he accept any personal appointment without attending promptly to the duties pertaining to it. All questions should be carefully considered and then submitted to a vote. After it has been decided, discussion should end. One of the serious difficulties to be met with in associations is the tendency of people who know the least to desire to say the most. It would be well to remember that one's standing is determined by the value of his suggestions and not by their number. It frequently happens that valuable time is lost by valueless discussions. Dogmatism at the best is objectionable, and it is especially so when all may be considered learners. The objects of The Tree Planting and Fountain Society have been subjects of careful study through the ages. Many eminent scholars have devoted a life to it. We have their works to aid us, and it would be modest to examine the results of their researches instead of advocating crude notions of our own. We are fortunate in having living in our country men justly celebrated for their knowledge of the objects of this society, and it is pleasant to know that they are glad to give to those seeking, whatever they may have learned that will be useful. Study of the works of these men will aid in forming correct conclusions and will dispel the darkness with which ignorance has enshrouded many, and overcome prejudice, one of the most difficult things with which to contend. The organization should be permanent. The objects are refining and ennobling in their influence. They are worthy the attention and support of the highly cultured. An opportunity is offered for the display of taste. It will be the duty of the club to formulate plans and superintend their execution, to see that work is well done and report to other clubs any workman who is incompetent or unwilling. There should exist an intimate relation between The Tree Planting and Fountain Society and all improvement clubs. Each should labor for the benefit of all, giving and receiving whatever knowledge any one may have that will be useful to others. With such a system people can protect themselves against those furnishing inferior stock, and they can also secure the services of skillful men to prune, trim, and care for trees.

The Tree Planting and Fountain Society will take pleasure in assisting local organizations in any way it may be able. Its office at 44 Court street, Room 32, will be open every day, except Sundays, after 2:30 o'clock P. M.

Visitors will be cordially welcomed.

L. COLLINS, *Secretary*.

“Woodman, Spare That Tree!”

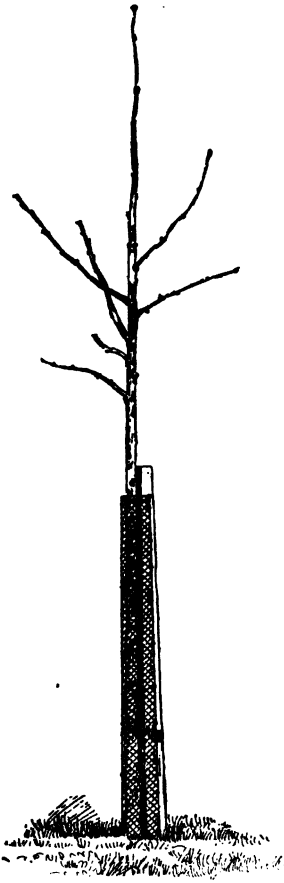
Woodman, spare that tree!
 Touch not a single bough!
 In youth it sheltered me,
 And I'll protect it now.
 'Twas my forefather's hand
 That placed it near his cot;
 There, woodman, let it stand,
 Thy axe shall harm it not.

That old familiar tree,
 Whose glory and renown
 Are spread o'er land and sea—
 And wouldst thou hew it down?
 Woodman, forbear thy stroke!
 Cut not its earth-bound ties;
 Oh, spare that aged oak
 Now towering to the skies!

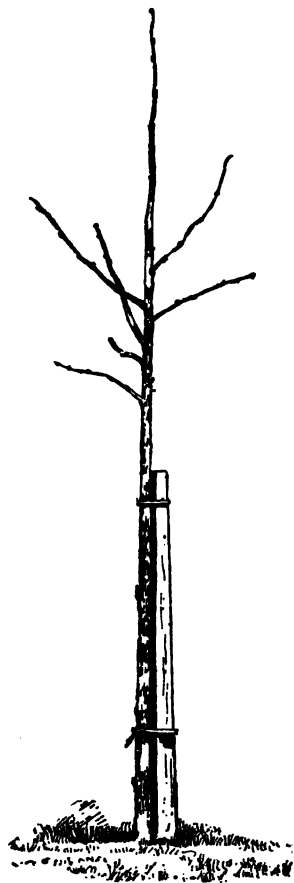
When but an idle boy,
 I sought its grateful shade;
 In all their gushing joy
 Here, too, my sisters played.
 My mother kissed me here;
 My father pressed my hand—
 Forgive this foolish tear,
 But let that old oak stand.

My heart-strings round thee cling,
 Close as thy bark, old friend!
 Here shall the wild-bird sing,
 And still thy branches bend.
 Old tree! the storm still brave!
 And, woodman, leave the spot.
 While I've a hand to save,
 Thy axe shall harm it not.

—GEORGE POPE MORRIS.



Tree Support with Wire Guard.



Tree Support without Wire Guard.

See page 21.

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THE
Tree Planting and Fountain Society

OF BROOKLYN, N. Y.



WITNESS TREE. FROM FORESTS OF MICHIGAN.

BULLETIN No. 2.

Office, No. 44 Court Street, Room 32,

OFFICE HOURS AFTER 2.30 P. M.

#

THE

Tree Planting and Fountain Society

OF BROOKLYN, N. Y. -

BULLETIN No. 2.

OBJECTS.

The objects of this Society shall be to promote the planting and protection of trees, the erection of drinking fountains, and otherwise to render the City of Brooklyn attractive.

OFFICE, NO. 44 COURT STREET, ROOM 32.

OFFICE HOURS AFTER 2.30 P. M.

DECEMBER, 1894.

BROOKLYN
EAGLE BOOK AND JOB PRINTING DEPARTMENT.

1894.

CONSTITUTION.

ARTICLE I.—NAME.

The name of this Society shall be "THE TREE PLANTING AND FOUNTAIN SOCIETY of Brooklyn."

ARTICLE II.—OBJECTS.

The objects of this Society shall be to promote the planting and protection of trees, the erection of drinking fountains, and otherwise to render the city of Brooklyn attractive.

ARTICLE III.—MEMBERSHIP.

All persons who may contribute the sum of five dollars, may be elected members of this Society at any regular or special meeting; this membership may be continued by a like annual contribution every succeeding year.

All persons contributing in one payment the sum of one hundred dollars or over shall be life members.

HONORARY MEMBERS.

All persons contributing fountains, and such other persons as may be proposed by the Board of Trustees of this Society, may be elected at any regular or special meeting of the Society honorary members.

ARTICLE IV.—OFFICERS.

The officers of this Society shall consist of a President, a Vice-President, a Secretary, and a Treasurer, to be chosen annually by the Board of Trustees.

ARTICLE V.—BOARD OF TRUSTEES.

There shall be a Board of Trustees of fifteen members, who shall be elected at the meeting adopting this Constitution. They shall elect from their own number a President, Vice-President, Secretary and Treasurer, to hold office for one year and until their successors are elected. They shall also divide themselves into three classes of five each, to serve respectively one, two, and three years, and thereafter five Trustees shall be chosen annually, on the second Tuesday of December, in place of those whose terms of office then expire.

ARTICLE VI.—ANNUAL MEETING.

The annual meeting of this Society shall be held on the second Tuesday of December of each year after 1882, at which the reports of the Board of Trustees and of the several Committees shall be rendered, and the annual election of Trustees and inspectors of election shall be held.

ARTICLE VII.—LIMITATION OF INDEBTEDNESS.

No expense shall at any time be incurred nor pecuniary liability be created in excess of the unappropriated funds in the Treasurer's hands.

ARTICLE VIII.—QUORUM.

At all meetings of the Board of Trustees, at least five members shall be necessary to constitute a quorum, but a less number may adjourn to a given day; notice of the said day being given to absent members.

ARTICLE IX.—AMENDMENTS.

No amendments to this Constitution shall be made excepting by a two-thirds vote of the members present at a regular or special meeting of the Society, nor unless the same shall have been previously submitted to the Board of Trustees and approved by them.

THE
Tree Planting and Fountain Society
OF BROOKLYN.

OFFICERS FOR THE YEAR 1894.

President :

A. A. LOW.

Vice-President :

JOHN W. HUNTER.

Secretary :

LEWIS COLLINS.

Treasurer :

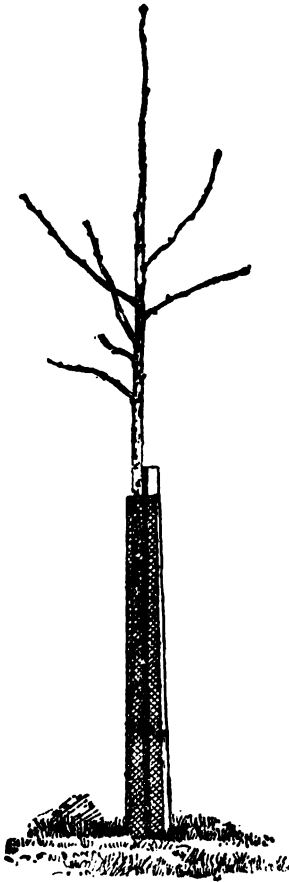
PAUL LEICESTER FORD.

Counsel :

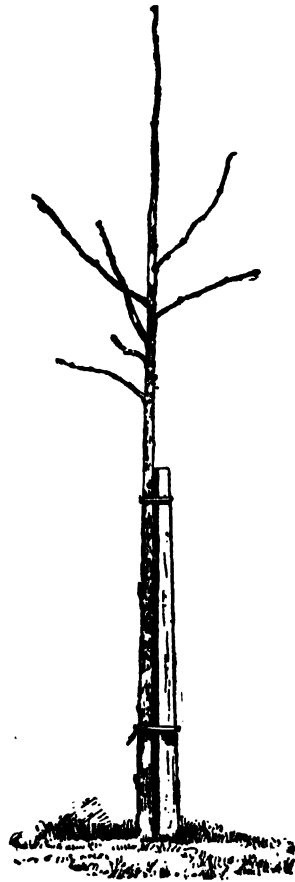
ALFRED C. BRITTON.

Trustees :

H. B. HUBBARD,	GEO. V. BROWER,	JOHN W. HUNTER,
HENRY HENTZ,	A. A. LOW,	E. J. RUSTIN,
L. COLLINS,	WM. T. LANE,	WM. C. REDFIELD,
JAS. R. COWING,	PAUL L. FORD,	A. MATTHEWSON,
A. C. BRITTON,	A. M. HATCH,	C. P. DIXON.



Tree Support with Wire Guard.

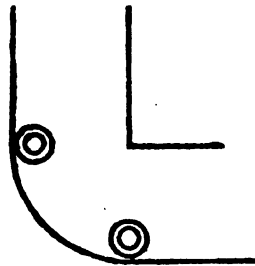
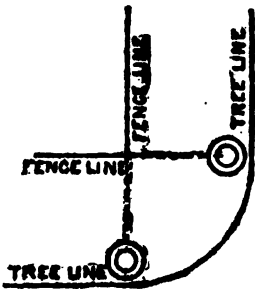


Tree Support Without Wire Guard.

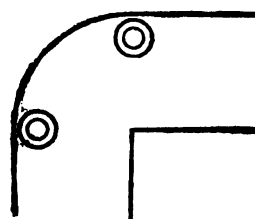
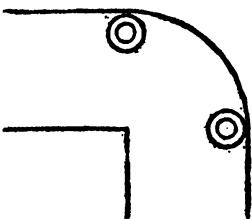
(See Bulletin No. 1, page 21.)

Trees at Street Intersections.

At street intersections, when practicable, place eight trees of large growing sorts, two trees on each corner, each tree, as nearly as may be, on the tree line of one street and on the fence line of the other street. The tops of these trees, properly trained, will be high above all awnings and lights, and in time will form a groined arch over both streets. This clump will form a dense shade where it will do the greatest good and least harm. As the trees grow the lower limbs may be removed until there is a clean shaft twenty feet high. The space under the trees will be high, light and airy, and shady. Should any branch approach too near a building it may be removed. One can hardly realize the beauty and utility of such an arrangement without seeing it. In hot days the shade will be very acceptable to those waiting for cars. It will be very pleasant for friends and acquaintances meeting on the corners. People can cross the streets in the shade of this canopy. These places, which in hot days are like furnaces heating the air, will be changed into a cooling shade. These clumps of sturdy trees supporting one another will form barriers to high winds and protect single trees and property in general.



THE ARRANGEMENT OF TREES DESCRIBED ABOVE



PREFACE.

The following numbers upon pruning trees were published in the *Brooklyn Eagle* during May, June and July substantially as found here. They have been republished in the present form with the hope that they may be useful to the people. The method in collecting the information is explained, and credit is given to the proper authors. No. 9, which appeared in the *Eagle* October 1, is presented here as being intimately connected with pruning, and it is especially applicable at the present time.

The article on "Grass Plots" may be carefully examined, inasmuch as in the near future grass will receive more attention. Each of the other articles conveys its particular lesson. No especial reference to them is needed. It is believed that a study of these pages will enable one to take a more intelligent part in arboriculture.

The favorable reception accorded to Bulletin No. 1 and the many kind expressions in its favor are very encouraging to the Tree Planting and Fountain Society.

LEWIS COLLINS, *Secretary.*

BROOKLYN, N. Y., December, 1894.

Pruning Trees.

No. I.

The subject of pruning trees is an important one at all times in arboriculture. It is especially so at this time owing to mismanagement in the past. Were professional tree pruners as well versed in the art as they pretend to be, and, no doubt, believe they are, the people would have good reason to be thankful. A glance at the trees will convince one that this assumption on the part of pruners is not founded in fact. In order to bring the subject of pruning before the people in an intelligent way, The Tree Planting and Fountain Society has made an effort to collect information on the subject. Early in February a letter was addressed to a number of gentlemen who are believed to understand the subject of which they speak. The letter asked what book or books, if any, treated upon the subject of pruning trees in cities in such a manner that it might safely be put into the hands of such as might desire to learn how to prune trees well. The following are among the answers received:

GERMANTOWN, PHILA., February 12, 1894.

MR. L. COLLINS, *Brooklyn, N. Y.*:

MY DEAR SIR:—Your envelope has been on my table for a day or two, but in some unaccountable way your letter became mislaid; but, as I remember its contents, you desire to know whether there was some good work on tree pruning that you could make good use of. Unfortunately, there is nothing of the kind. There is really so little to learn about pruning from books that some of the brief paragraphs on the subject in *Meehan's Monthly* convey all that the best treatises could tell. The unfortunate particular is that the intelligent man is seldom the regular tree pruner. Men who make a business of it and have all the trade are men who are utterly ignorant of the principles of pruning and know no more of pruning a tree than is necessary to cut a cord of wood. Those who have valuable trees could do more by setting the proper system of pruning for themselves and then insist on those laborers doing just as they are told to do. If I have not answered your letter, what you desire to know, I shall ask of your kindness to write to me again.

Yours truly,

THOMAS MEEHAN.

OFFICE OF GARDEN AND FOREST, }
 ROOM 107, TRIBUNE BUILDING, }
 NEW YORK, February 6, 1894. }

L. COLLINS, Esq., *Secretary Brooklyn Tree Planting and Fountain Society:*

DEAR SIR:—I know no book which gives proper directions for trimming street trees; that is, for selecting the limbs to be removed and the amount of cutting that different species require. The general subject of forest tree pruning, however, is very completely set forth in a little book on "Tree Pruning," by Count Des Cars. * * * * I think it was published by the State Agricultural Society of Massachusetts and it was translated by Professor Sargent. It is an admirable manual for the points which it covers.

Very truly yours,

W. S. STILES.

U. S. DEPARTMENT OF AGRICULTURE, }
 DIVISION OF FORESTRY, }
 WASHINGTON, D. C., February 15, 1894. }

L. COLLINS, *Secretary of the Tree Planting and Fountain Society, 44 Court Street, Brooklyn, N. Y.:*

DEAR SIR:—As regards a good work to be put into the hands of a trimmer or pruner, I know nothing better than the "Treatise on Pruning Forest and Ornamental Trees," by A. Des Cars, translated and published by the Massachusetts Society for the Promotion of Agriculture, which contains that which is specially necessary to a pruner, namely, illustrations showing good and bad pruning, etc. I think you will find it extremely valuable, at least in your own office.

Respectfully yours, B. E. FERNOW, *Chief.*

ARNOLD ARBORETUM, HARVARD UNIVERSITY, }
 JAMAICA PLAINS, MASS., April 20, 1894. }

L. COLLINS, Esq., *Brooklyn, N. Y.:*

MY DEAR SIR:—Absence in California and Arizona has delayed until to-day the acknowledgment of your note of April

2. I cannot see any possible objection to your publishing in the papers extracts from Des Cars' "Treatise on Tree Pruning." I do not know any other work to recommend to you. I have practiced Des Cars' principles, more or less, for a number of years and find his method an admirable one.

Yours very truly, C. S. SARGENT.

MASSACHUSETTS SOCIETY FOR PROMOTING }
AGRICULTURE, 53 STATE STREET, }
BOSTON, APRIL 21, 1894. }

L. COLLINS, Esq., *Secretary, etc.*:

DEAR SIR:—This Society will be glad to have Des Cars' used in such way as will best promote the objects of your Society.

Yours truly

FRANCIS H. APPLETON,
Trustee and Secretary.

The above referred to work is copyrighted by Professor C. S. Sargent. It is for sale by Dannell & Upham, Boston, Mass. Extracts from it will be made in a series of articles contemplated on pruning trees.

NO. II.

The following extracts from *Meehan's Monthly* present very forcibly some of the obstacles to be met in pruning trees in Brooklyn as well as some of the ills of past improper pruning.

I. PRUNING LARGE TREES.—Wherever one travels he may see evidences of the improper pruning of large trees—snags many inches in thickness are left which rot down to the main trunk—the rot not stopping there, but penetrating the whole body of the tree, or if a side branch is taken off it may be several inches from the trunk, and this rots in like manner. All branches should be cut as close as possible to the main trunk and then painted to prevent damage by water until the wound shall have thoroughly grown over. One would think that any one going through the world with his eyes open would easily

see the result of this ignorant pruning and profit by experience against such bad practice, but it seems not to be the case. Although any one may see across the street his neighbor's trees dying from this kind of mutilation, he will in all probability have trees done in the same way. Trees in public gardens and parks especially suffer from this ignorance. Trees are planted comparatively close when they are young, in order to make an immediate shade. Not having the opportunity to branch in a lateral direction they naturally go upward, and are then considered too lofty and are headed back with the mistaken idea that this will cause the lateral spread. This also any one might see from experience is a fallacious idea. Trees try to grow upwardly all the stronger for this kind of heading back, and then usually rot within a few years afterwards. A judicious thinning when young gives the tree a chance to have its natural characteristic, which is to spread laterally as well as vertically. Very often for street trees kinds are selected that have a tendency to grow vigorously upward, because of their affording shade somewhat earlier in life than trees which persist in spreading. The temptation to cut back usually follows from employing this class of trees. It will be much better to select at first those which have greater natural tendency to spread, although they may not grow so rapidly at first. It is possibly the rage for fast growing trees which induces this improper selection, and which finally leads to the destruction of all street trees.

2. **HEADING BACK LARGE TREES.**—A Philadelphia correspondent, A. R. McIlvaine, has been told by a tree pruner that it will not hurt trees any more to head them back than it would hurt him to have his hair cut. Strange how a smart saying will often have some effect! The fact is that the heading back of large trees is the first step to rapid decay. If large trees have grown too tall to be of the service originally intended, it will save time to cut them out altogether, and plant new ones—not trifle with them by heading them back. A lady who has traveled considerable suggests that this heading back of large trees is peculiarly a Philadelphia practice. If this be so it must come from the fact that people ignorantly plant the Silver Maple as a shade tree, simply because it

happens to grow fast when young. Its peculiar habit of growth soon deprives it of the utility expected from a shade tree; it is this failure to supply the original want which suggests the heading back process.

3. The Silver Maples, *Acer dasycarpum*, are held responsible for the ignorance and neglect of those who planted them so thick and left them without protection and with no care. This tree, set only in wide streets and forty feet apart, pruned to a single shaft, surplus limbs removed by a skillful pruner at the proper time, will develop into a very beautiful object. Several years since, the Maple scale, *Pulvinaria innumerabilis*, appeared in countless numbers upon this tree and impaired its vitality to such an extent that a few weak ones died and many lost part of their limbs. This scale has nearly disappeared. Another pest, however, has presented itself in the Leopard moth, *Zenzera pyrina*, which commits its depredations largely on the Silver Maple. It bores into the limbs and weakens them and in storms they are broken off.

L. C.

No. III.

[*From A. des Cars.*]

1. The secret of obtaining a complete cure in all operations requiring the removal of a branch, either living or dead, consists in cutting close to and perfectly even with the trunk. Many authorities have hinted at this, the cardinal principle of all pruning, but M. de Courval first clearly demonstrated its importance, while his discovery of the value of coal tar, or the refuse from gas works, as a covering for wounds made in pruning, renders the application of his rule in all cases entirely safe.

2. FORMATION OF WOOD.—The reason that a branch should be cut close and even with the trunk is found in one of the simple laws of plant life. It is known that sap has a double movement—that it mounts from the roots to the leaves and returns again in an elaborated condition to the roots. Roots take up water from the soil, in which there are various salts in solution. This water rises to the leaves; these absorb

from the air and decompose carbonic acid gas, the basis of which is carbon, which, combined with water, constitutes the elements of wood. The sap, thus elaborated by the leaves, is carried down again in a liquid state and is deposited, year after year, in the successive concentric layers of wood which form the trunks of all trees, with the exception of palms, yuccas, etc., which need not now be considered. It follows that a wound caused by amputation of a branch must, in order to heal properly, be made perfectly even with the trunk, that every part of its outer edge may be brought into direct communication with the leaves through the network of cells destined to convey the descending sap.

Although this theory rests on one of the most elementary principles of vegetable physiology, it has not been applied before to practical forest management. The amputation having been made even with the trunk in the manner explained, new wood will soon appear, forming first round the top and sides of the wound, which is soon completely surrounded by the new growth. The wound is gradually healed over and the decay of the trunk prevented. The time required for the complete healing of a wound depends, of course, upon its dimensions and the natural vigor of the tree. The principle being established that large wounds can be made without injury to the tree if care is taken in the manner indicated to prevent decay, it is easy to show the advantage of cutting off injured branches of any size. It is preferable to avoid, of course, the necessity of making large wounds by properly pruning trees when young. All foresters agree that trees should be trained when young, but De Courval has amply demonstrated by numerous remarkable specimens exhibited at the agricultural show of Paris, in 1861, and at the universal exposition of London, in 1862, that it is beneficial and often indispensable to prune the oldest trees, if care and judgment are used in the operation. He has clearly shown, too, that trunks so treated attained a larger size and a greater value in a given time than those which, under similar conditions of growth, had been allowed to retain all their badly placed branches. I regret, in this connection, to differ from so eminent an authority as De Breuil, who gives the following rule: "Amputation must be performed in such a manner that the diame-

ter of the wound shall not exceed that of the end of the branch." Such a practice must, I believe, be disastrous, for whenever a branch of large size is amputated in this way, it is evident that a cavity in the trunk of the tree will sooner or later appear.

3. DISADVANTAGES OF THE COMMON SYSTEM.—As descending sap alone forms the new bark and wood which heal over the wound, it follows that, if a cut is made not close to the trunk, but the lower portion extending somewhat from it the new growth cannot cover over the lower part which is cut off from communication with the leaves ; so that the wood on the lower part, not being covered with a new growth, must soon begin to decay and in time destroy the trunk of the tree. Examples of this bad method are very common. Each amputation of a branch produces a cavity, and the tree soon becomes entirely decayed. In view of such destruction, it might seem, perhaps, that branches of a certain diameter cannot safely be amputated. That this is an erroneous idea will be easily seen, and it is only necessary to make the amputation even with the trunk, and then cover the wound with coal tar to avoid all bad results. Although wounds caused by the amputation of small branches heal over in spite of the faulty methods of pruning generally employed, such operations are nevertheless, attended with considerable danger to the tree. Protuberances are formed on the trunk at the points where the branches have been cut, and thus produce a multitude of small, weak shoots. The development of such shoots indicates that a tree is in an unnatural condition, which may be entirely avoided by cutting the branches even with the trunk.

No. IV.

[*From report of the Committee on Forest Trees by John Robinson, Chairman.*]

1. The subject of tree pruning, too, is one of as much importance as tree selection or tree planting, and for success in either a knowledge of structural botany is of immense assistance. But after all, the most depends upon the intelligence of the arboriculturist himself ; a bright, thoughtful, studious man

will work out for himself far better results than rules laid down in books can do for him. Let him, therefore, ground himself thoroughly in the subject before he commences his work, perhaps, by spending a winter in the study of plant life and structure, for when he works with a knowledge of his subject his work will be well done.

[*From Meehan's Monthly.*]

2. In many cases trees are as thick with branches as if they were gigantic brooms. Branches should never be allowed to set as thick as this. Trees to be healthy require an abundance of healthy leaves. An abundance of poor and half starved leaves is of little consequence. When branches are thickly crowded the mass of leaves are inferior and of very little good. Branches should be kept thinned out so that those which are left have abundance of room to develop healthy leaves. A proper thinning in the summer when the shoots are made, and carried on every year would keep the main branches in first-class condition.

[*From A. Des Cars.*]

3. INJURY TO BARK.—Bark once injured or loosened can never attach itself again to the trunk, and whenever wounds, abrasures or sections of loose bark exist on the trunk of a tree, the damaged part should be cut away cleanly as far as the injury extends. Careful persons have been known to nail on to a tree a piece of loosened bark in the hope of inducing it to grow again, or, at least, of retaining on the young wood its natural covering. Unfortunately, the result produced by this operation is exactly opposite to that intended. The decaying wood and bark attract thousands of insects, which find here safe shelter and abundant food and, increasing rapidly, hasten the death of the tree. In such cases, instead of refastening the loosened bark to the tree, it should be entirely cut away, care being taken to give the cut a regular outline, especially on the lower side; for, as has been already explained, if a portion of the bark, even if adhering to the wood, is left without direct

communication with the leaves, it must die and decay. A coating of coal tar should, of course, be applied to such wounds.

4. **LOOSENED BARK.**—It is necessary to frequently examine the lower portions of the trunk, especially of trees beginning to grow old, for here is often found the cause of death in many trees, in the large sheets of bark entirely separated from the trunk. This condition of things, which often cannot be detected except by the hollow sound produced by striking the trunk with the back of the iron pruning-knife, arrests the circulation of sap, while the cavity between the bark and the wood furnishes a safe retreat for a multitude of insects, which hasten the destruction of the tree. The dead bark should be entirely removed, even should it be necessary in so doing to make large wounds. Attention, too, should be given to injuries to the bark caused by bruises. These may be hidden for years and are often only detected by the peculiar sound produced by a blow of the pruning-knife or some other instrument. Cases of this nature require the treatment recommended for the last class.

5. **THE USE OF COAL TAR.**—Coal tar, a waste product of gas works, is a dark brown, imperishable substance, with the odor of creosote. It can be applied with an ordinary painter's brush and may be used cold, except in very cold weather, when it should be slightly warmed before application. Coal tar has remarkable preservative properties and may be used with equal advantage on living and dead wood. A single application, without penetrating deeper than ordinary paint, forms an impervious coating to the wood cells, which would, without such covering, under external influences, soon become channels of decay. This simple application then produces a sort of instantaneous cauterization and preserves from decay wounds caused either by pruning or accident. The odor of coal tar drives away insects or prevents them, by complete adherence to the wood, from injuring it. After long and expensive experiments the director of the parks of the city of Paris finally, in 1863, adopted coal tar in preference to other preparations used for covering the wounds, as may be seen in all the

principal streets of the capital. One coat of coal tar is sufficient for wounds of ordinary size, but when they are exceptionally large a second coat may, after a few years, be well applied.

No. V.

[From *A. Des Cars*.]

1. The appearance of many trees, their trunks covered with gaping wounds, protuberances and the stumps of dead branches, clearly indicates that they have received careless or ignorant treatment. It is evident even to persons little familiar with the art of silviculture that such trees are decayed to the heart and of little value for industrial purposes. The number of trees thus affected is very great. Such a condition is the result generally of entire neglect of pruning or often, perhaps, of an unnatural and therefore improper system.

2. That pruning can accomplish the results which are claimed for it is found in the fact that trees treated by the rational system proposed, grow more vigorously and retain their foliage longer than unpruned trees in the same locality grown under similar conditions.

3. The future value of a tree depends upon the manner in which the operation of pruning has been performed, and the persons to whom this work is intrusted should fully understand its importance. Unskillful or injudicious pruning may completely ruin a tree, and the difficulty of obtaining labor capable of doing such work intelligently causes, no doubt, many arboriculturists to completely neglect pruning of every kind.

4. **SELECTION OF THE LEADER.**—The branch most nearly perpendicular on the trunk of the tree should be selected to form the leader, and it may be stated as an absolute rule that whenever a branch near the top of the tree stands vertically on the trunk, or even on any part of the trunk, it should be preserved for the leader. And it is wrong to suppose that only the original leader can be used. Its place may often be supplied by one of the lateral branches even, and by shortening the other branches to stimulate the growth of the new leader, the tree will in a few years, straighten up in a manner which

will appear astonishing to persons unfamiliar with the results which may be obtained from a sensible system of pruning.

5. **DOUBLE OR FORKING BRANCHES.**—In the case of a double branch, or of a branch forking close to the trunk of the tree, one of these branches should always be removed, that the base of the branch may not become disproportionately large. If, however, such double branches are objectionably near the trunk of the tree, they are of great importance at the extremities of main branches; and, whenever it is possible, branches should be shortened in such a manner as to secure forking branches at the ends. These give to the tree a more natural appearance, and by dividing the flow of sap prevent the growth of too vigorous shoots, which might in time develop into supplementary leaders, to the injury of the tree. For this reason it is necessary to remove all branches or branchlets assuming a vertical growth or inserted on the upper side of a shortened branch, in order to check the tendency of such branches to grow too vigorously at the expense of the leader.

6. Although essential in pruning young trees this is less important in the case of old trees with large, full heads, which in themselves have a tendency to check an unnaturally strong growth of any individual branch; and in operating on old trees the preservation of vigor in the shortened branch is the principal object to be attained. It is almost unnecessary to add that only main branches directed toward the outside of the tree should be preserved, and that branches which from any cause have turned back toward the trunk should be headed in, as well as branches with too great a tendency to droop unnaturally; generally it will only be necessary to shorten such branches to induce them to resume a natural direction of growth.

7. When several branches have been developed from one node, forming what botanists call a whorl, they should not all be cut away at the same time, lest the circulation of sap be checked by the destruction of bark (and consequently of cambium layer) over too large a surface. All dead and dying wood should be removed.

8. Great caution should be observed in amputating large branches; small branches can of course be lopped off at any

time without danger to the tree. We agree with De Courval that at least three medium sized branches may be safely removed from a tree in one year; although if the branches are very large not more than one, or perhaps two, should be cut at one time. It is always desirable, however, not to unnecessarily increase by the removal of living branches the wounds left on the trunk by the cutting off of dead branches or other excrescences.

9. Whenever it is necessary to amputate a large or long branch it should be cut first in such a manner as to leave a stump two or three feet long before the final operation of cutting close to the trunk is undertaken. In this way the danger of tearing away by the weight of the falling branch portions of the bark of the trunk may be avoided.

10. It is an indispensable condition of the prompt healing over and perfect circulation of sap that all wounds should be evenly cut and shaped as nearly as possible to the trunk of the tree.

11. The operation of amputating a branch will not be complete, whatever method is employed, until the wound is made perfectly smooth.

12. USE OF COAL TAR IN DRESSING WOUNDS.—All wounds made on the tree in pruning should be covered with a coat of coal tar applied with an ordinary painter's brush.

No. VI.

[From Meehan's Monthly.]

1. SUMMER PRUNING OF FRUIT AND ORNAMENTAL TREES.—In the art of pruning nothing is more essential than a knowledge of what ought to be done in the summer time. It is quite common to find parties objecting to street trees or orchard trees growing tall, and in order to make them low and bushy the heads are sawed off in the winter time. Very little observation would show that such trees send out strong and vigorous shoots during the summer, which grow rapidly upwards and the place of the branches cut away. It is a maxim in

social economy that the tendency is for "the rich to get richer and the poor to get poorer," and this maxim equally applies to the branches in the community which we call a tree. The tendency is for the strong branches to get stronger and wholly at the expense of the weaker ones. The proper thing to do is, in the summer, when these strong shoots push out from near the places where the larger ones were cut away, to pull them out by hand as soon as they appear. The vigor of the plant is then thrown into the side branches and in this way we get the stronger lower branches desired. In like manner shrubs are pruned in the winter time in order to keep them low. Any one can see that the shoots which push out from the top of the bushes are all stronger through having the plant cut back. If these strong shoots are pulled out, as sprouts, early in the season, vigor would be sent into the lower branches, and we should then get the dwarf bushy plants required. This is a great reason for the summer pruning of hedges and also the reason why the truncate-conical form is adopted for hedging. We cut off the strong shoots which are always at the top early in the summer, and the result is that the vigor of the plant is thrown into the side branches. In no other way can we keep a hedge bushy at the base. It used to be an axiom with practical gardeners that summer pruning weakens and winter pruning strengthens the parts of a tree just below where the pruning has occurred. In a certain sense this is true. It does no harm, however, to accept this as an axiom, and the man who believes that summer pruning weakens the point where the pruning occurs and winter pruning strengthens it, will have a good base on which to operate. Pull out strong shoots in summer—let weak ones grow.

2. PRUNING HEDGES.—In the pruning of hedges, as well as in the pruning of other trees, it should not be forgotten that the ultimate effect of all pruning is to weaken the growth power of the plants. This is evident to any one who will consider the effect of pruning hedges. Though the plants may be twenty years old, it is seldom that the plants in the hedge rows will have stems thicker than one's wrist, while if the same plants had been suffered to grow up as trees they would have trunks of three or four feet in circumference. Applying this

principle to pruning in general, no young tree should be touched for some years, unless with the evident object of keeping it small and dwarf; and in the treatment of hedges especially, the young plants set out should not be touched until they have acquired great vigor of growth. In setting a hedge of osage orange, for instance, the plants should be suffered to grow as they will, for two or three years, according to the richness of the soil and the vigor of growth, and after they have achieved this extra vigor they should then be cut to the ground in the winter season. The result of this is that very strong and vigorous shoots then push up and these can be trimmed into the form desired during the next growing season, and for hedge purposes the form should always be that of a truncate cone. The object of this form of training is to allow every leaf to have the full benefit of sunlight, which they cannot have when the hedges are trimmed perfectly upright and flat on top. Hedges trimmed in this latter way soon get bare of foliage at the base, while hedges trimmed conically always retain their strength and foliage clear to the ground. In pruning trees the same principle prevails. If a large tree be headed off severely, it seems to throw out a few very strong branches, and the impression might be given that this was an evidence of the strength of vital power, but the reason for this strength is that the new branches with their numerous leaves avail themselves temporarily of the large supply of food stored up in the trunk. But these same leaves have to store up food for another year and it is impossible for the comparatively few leaves—no matter how strong these shoots may be—to furnish sufficient food for the enormous number of cells which require nutrition. As a consequence numbers die of absolute starvation, and rotten portions appear in every direction. Large trees so pruned consequently become hollow from decay and very often die within a few years; or, if they live at all, are never healthy.

No. VII.

In the former number of this series certain general principles have been presented. The application of these principles assists in pruning trees well. Arboriculture includes among other things varieties of trees to plant, distances apart, arrange-

ment and after care, which includes pruning. These subjects, a knowledge of which is essential to the arboriculturist, have been considered in Bulletin No. 1, issued by The Tree Planting and Fountain Society. Varieties to plant on pages 6, 13, 17, 30 to 41 inclusive, and 48 to 51 inclusive. Distances apart to plant trees on pages 7, 17 and 43. Arrangements on pages 12, 13, 42 and 43. After care and pruning on pages 14, 16 and 19. Valuable information by experts is given, which will pay for careful perusal by any one who desires to become acquainted with arboriculture. A copy of Bulletin No. 1 will be furnished on application at the office of the Society, 44 Court street, room 33, between 3 and 4 o'clock P. M., or by mail.

Pruning trees may be divided into two parts—knowing what should be done, and doing it. The former requires a knowledge of trees, of their habits of growth, and taste. The latter requires skill in the use of the necessary tools and the ability to climb in trees as may be needed. All these requirements may be united in one person. Many people owning trees are engaged in a profession or business which occupies their time. Many have not the necessary skill in the use of tools. There is great need of a class of professional tree pruners who are honest, active, competent, and trustworthy. The intellectual part of pruning is artistic; it is exalting in its influence; it offers a field for the exercise of the best taste; it is one of the essential parts of arboriculture which ranks as a fine art, as do architecture, gardening and landscape architecture. Pruning as applied to trees now in our streets is limited. It is called upon to deal with compositions many of which are poor. In instances of this kind the problem may be considered as making the best of a bad case. The situation may require a tree of a certain size or shape. The one standing may be too large, or of too small a sort, or of wrong shape. Here the power of the pruner is limited. He must consider the problem as it presents itself. Some of the problems are easy of solution. The tree may be dead, or nearly so—remove it. There are branches dead or nearly so—remove them. Certain branches are too low—remove them. Here the branches are too thick—thin them out. Here are stubs left by former pruning improperly done—remove them and treat the wounds as directed in No. V. of this series, paragraphs 10,

11 and 12. Here the trees are too thick—remove a part of them. This problem is not so easy of solution. The problems arising are numerous and can be properly solved only by a person who has a knowledge of the subject. As is the physician who does not understand therapeutics, as is the clergyman who does not understand theology, as is the advocate who does not understand law, so is the arboriculturist who does not understand the subject.

Pruning to trees may be likened to dress to people; neglected trees are like neglected people; well pruned trees are like well dressed people. Inferior trees, well cared for, show to better advantage than superior trees neglected. Owners of trees should care for their pruning. Well pruned and well cared for trees reflect credit upon their possessor as well dressed and well behaved children reflect credit on their parents or guardians. In no other way will so small an outlay add so much to the value of property as in arboriculture. It may be suggested that all people do not take an interest in trees. That is true. It may be added that there is no probability of all agreeing in this matter. It is the same with other things. Some aspire to the higher—to greater excellence. It is very encouraging to know that there is a continual and rapid progress in arboriculture. Those who are interested must take the lead. It is so in all matters of development from the lower to the higher.

NO. VIII.

Everyone should learn what they conveniently can about pruning trees that they may know when pruning is well done, if for no other reason. Nothing will do away with the improper pruning of the present so quickly and so well as for the people to learn that they may be able to judge correctly of the work. Giving to the term pruning a liberal interpretation, let every one who has one or more trees make an examination of the same, and do, or get some one to do, what is required to put them in the best condition. Begin with the base, see whether it is suffering injury from contact with the flagging; if so remove as much of the flagging as may be necessary to overcome the difficulty. This being done examine the guard,

if one. If it presses upon the trunk in any place enough to cause injury, relieve the pressure. Iron guards are made with such strong bands that when the tree grows to fill them they will not yield, but sink into the growth and if not removed kill the tree. Careful watch should be kept of all guards, and especially of those made of iron. Guards made of wire destroy a tree unless removed when the trunk fills it. Wooden guards sometimes injure trees by pressure or by chafing. All unnecessary guards should be removed. A plain, inexpensive, serviceable, effective and comely guard may be made of galvanized wire cloth with one-half inch mesh wrapped around the trunk and fastened with a small wire, so small that if neglected the growth of the tree will break it before suffering injury. The wire should be made wide enough to lap well, so it can be let out to suit the growth of the tree. For more about guards see Bulletin No. 1, pages 13, 22, 23, 24 and 59. For Bulletin No. 1, see No. VII. of this series. Next examine the trunk. If it has been girdled by horses or injured in any other way, repair the injury as directed in No. IV. of this series, paragraph 3. If there are any stubs left from previous improper pruning remove them. (See No. II., sec. 1, and No. V., secs. 10, 11 and 12). We have now come to the head or top of the tree. (See No. IV., sec. 2). It requires a knowledge of the habits of growth of the tree under consideration to be able wisely to determine what to do. A person who will not take the trouble to learn should not attempt to direct, but should employ the services of a man who is competent to prune trees well. Much bad pruning results from the direction of incompetent persons. After it has been decided what branches should be removed, see, for directions, No. V., secs. 8 and 9; for preparing wounds for treatment, see No. V., sec. 10; for dressing wounds, see No. V., sec. 12.

The height from the ground the branches should be removed from the trunk of a tree is an important question. The city ordinance requires that "All trees kept, maintained or cultivated in any of the streets, avenues or lanes of the city shall have the bows or branches cut or trimmed close to the trunk of the tree at least ten feet above the ground." This ordinance has been disregarded and this accounts for the great number

of trees allowed to head so low down. Pruning trees can be accomplished much more economically, and at the same time more satisfactorily if the residents of a block will unite and reason together, studying the block as a unit, plant and prune so as to develop a harmonious whole and so avoid the incongruities likely to appear where each acts independent of the others. It may be of interest to examine an article entitled "Improvement Clubs," on page 56 of Bulletin No. 1 of The Tree Planting and Fountain Society.

No. IX.

THE TUSSOCK MOTH, ORGYIA LEUCOSTIGMA.—This moth has been very abundant during the season now drawing to a close, and has demonstrated what it can do if left unmolested. Probably no citizen wishes to witness a repetition of its ravages during the summer of 1894. To guard against such an event it behooves the people to move en masse, and during the fall and winter and spring, before leaves put forth, have all the trees affected by the moth, whether in the streets or parks, on private grounds or in gardens, and all fences and buildings, carefully examined and the egg masses removed and destroyed and the cocoons brushed off. By one concerted effort on the part of the people a quietus may be put upon this pest that will free the city from a like visitation. Many trees in Brooklyn are old and partly decayed; many are weakly by reason of former injury from various causes and are partly dead; in many places the trees are too thick and should be thinned out. The removal of all decayed trees and of others, the absence of which would be an improvement, would destroy a great number of eggs and lessen the work of hunting for them. The remaining trees should be headed back when desirable and others pruned, which also would greatly lessen the eggs. After this has been done the trees left should be carefully examined by competent men and thoroughly cleaned. Hunting for eggs in trees will be much easier after the leaves have fallen. Fences, stoops and buildings can be cleansed at any time. It should be considered a duty by every property owner to see to it and have his premises cared for. Eggs are not likely to be found in considerable numbers above the first story of buildings. They are

quite likely to be found under the railings of fences, so low down that they are not seen except by one stooping down; hence, these places should be carefully examined. The egg masses and cocoons are easily seen, and people occupying houses should see that the houses and fences are cleaned. Caring for trees is more difficult and can better be attended to by persons having ladders and necessary tools and experience. This work can be done much better and less expensively if people living on a block would unite and have all the trees on the block attended to at one time and by one party.

In 1885, July 20, and again in 1887, July 15, when the tussock moth were few in Brooklyn and easily under control, the following was published in the *Eagle*: "REMEDY—Let people having trees hunt the cocoons and destroy the chrysalides. Children may be very serviceable should their attention be called to it. Let people offer a price per hundred cocoons to the children and they will make quick work of them. The cocoon is a yellowish, silky substance, about an inch long, readily seen and easily removed. To be effective, it must be attended to soon." The rill of '85 has become the flood of '94.

[From the *Brooklyn Daily Eagle*, Monday, April 30, 1894].

Wires and Trees.

CORRESPONDENCE RELATING TO ELECTRICAL DAMAGE TO
PRIVATE PROPERTY.

NEW YORK, April 17, 1894.

Trustees of the Tree Planting and Fountain Society:

GENTLEMEN:—The enclosed clipping from to-day's *Tribune* suggests to me that similar action against the trolley and electric companies in Brooklyn might result in some good. See the trees along Lee and Nostrand avenues; also in front of houses on Lexington avenue.

Yours, GEORGE TUTHILL.

239 Lexington avenue, Brooklyn.

The Clipping.

NEWBURGH, April 17 (Special).—What is believed to be the first case of the kind has just been decided in Judge Brown's Court before a jury. It was that of George W. Hawkins, a Middlehope nurseryman, against the Hudson River Telephone Company. The company was charged by the plaintiff with destroying a half dozen fine spruce trees in front of his place by cutting off branches and otherwise disfiguring them while stringing their wires along the road. No consent had been given by the plaintiff. Mr. Hawkins sued for \$100 for each tree—\$600 in all. After the court had charged quite strongly in his favor, the jury gave him a verdict for \$500. After Judge Brown had denied the motion for a new trial and granted a stay of thirty days, counsel for the plaintiff startled the defendant by offering a motion to triple the judgment under provisions of the code, and the court startled them more by granting it, thus making the judgment to go on the county records for \$1,500. The case will go to the Court of Appeals, without a doubt, and if affirmed, there will be no end of suits against telephone companies.

THE TREE PLANTING AND FOUNTAIN SOCIETY, }
BROOKLYN, April 21, 1894. }

Mr. George Tuthill, 239 Lexington avenue :

DEAR SIR:—Your letter of the 17th inst. about electric wires and trees has been received ; also clipping from the *Tribune* enclosed. In case of appeal the action of the higher court will be awaited with interest.

The various companies using electricity, by means of wire overhead, in too many instances have shown a disregard to the wishes of the people in locating such wires. As in the case of Mr. Hawkins, beautiful trees, planted for ornamental purposes, highly prized by the owner, admired by others and loved by all, have been mutilated and their beauty destroyed. So many such instances have occurred that people are becoming prejudiced against the companies and look upon them as common enemies, careless of the rights and pleasures of others.

There are two sides to this as to other questions. These companies have suffered much from the people in injury to wires and poles and abusive speech. The electric light companies, who string overhead wires, have been very aggravating. One would believe, seeing their wanton destruction of trees, that they were altogether regardless of others' rights. Their offenses are grievous, indeed, and they deserve punishment. On the other hand, the trolley companies have suffered greatly from drivers of vehicles of various kinds, impeding their progress without any reasonable cause. It is difficult to understand why the people who are supposed to have the power allow their representatives thus to annoy, without reason, this company. There is time to mention only one example on each side. It may safely be stated that those who compose these companies disapprove of the misdeeds of their employees as greatly as the people at large disapprove of the misdeeds of their representatives. The uses to which electricity is applied are numerous and the advantages arising from them are incalculable. It would be far better for people having varied interests to dwell together in harmony, each respecting the rights of others. Experience teaches that there are some who are not governed in their acts by any just sense of the rights of others. Common safety requires that such shall be punished for infringement of rights. The law is supposed to define the limit of legitimate action. Courts of justice are the machinery which punishes for transgressing these limits. The people and corporations should use every effort to restrain within proper limits their employees or agents. Unless this can be done the law should be appealed to for redress.

Allow me to suggest that you use your influence to organize a tree and improvement club on your block, as is being done in many localities. Such organizations may act on the defensive to such an extent that evil doers will be brought under proper restraint.

Very respectfully,

LEWIS COLLINS,

Secretary.

[*From the Standard-Union, Thursday, May 22, 1894.*]

Shade Trees.

WHAT MAY AND MAY NOT BE DONE TO PRESERVE THEM.

Correspondence between uptown residents, who are intersted in the subject, and The Brooklyn Tree Planting and Fountain Society.

Certain residents of Putnam avenue have become interested in the preservation of two large trees in the vicinity of their residences, and have circulated a petition addressed to The Tree Planting and Fountain Society, to which Secretary Collins has replied, defining the lines within which citizens may act in the work of preserving the trees. The petition and reply are given herewith :

The Tree Planting and Fountain Society, 44 Court Street :

We, the undersigned property owners and residents, hereby protest against the cutting down of the two large and beautiful shade trees in front of property Nos. 835 and 837 Putnam avenue, where they intend to build. Knowing the object and aim of your Society to protect and plant trees, we are sure that you will give heed to our petition :

Respectfully submitted :

A. A. DOUGHTY, 833 Putnam avenue.
 F. H. HIGBIE, 833 Putnam avenue.
 W. H. URIS, 839 Putnam avenue.
 GERARDO CANTIN, 831 Putnam avenue.
 F. G. GLUCK, 831 Putnam avenue.
 WILLIAM T. MYERS, 815 Putnam avenue.
 FRANK V. DOUGHTY, 833 Putnam avenue.
 E. E. WRIGHT, 837 Putnam avenue.

MR. A. A. DOUGHTY, 833 *Putnam avenue :*

DEAR SIR:—Your letter of the 16th inst., containing a protest against "cutting down two large and beautiful shade trees in front of property Nos. 835 and 837 Putnam avenue,"

signed by yourself and eight other property owners and residents of the immediate neighborhood, has been received. In treating matters of this kind, it is desirable to give attention to the fundamental principles governing them. Your neighbor is owner of the property in question. Ownership gives him the sole right to say whether or not trees shall be planted on his premises. And if trees are already there he has the right to say whether they shall remain or be removed, unless in some way they interfere with the proper use of the sidewalk, or are in the way of certain improvements or for some reason are declared a nuisance; then the city may order their removal, unless the objectionable features are overcome or nuisance abated. The two beautiful trees to which you refer are subject entirely to his will. That power is one of the advantages of owning property in Brooklyn. There are cities in which the right to decide what shall be and what shall not be on the sidewalks resides in the corporation. Did that condition exist here (there are a few streets thus affected), it might prevent your neighbor from removing his trees. At the same time, and for the same reason, it might be used to prevent you from planting or retaining trees. It is fortunate for the citizens of Brooklyn that the possession of property is so complete. "It will be mine," "I shall have the power to decide," urges a man to the practice of diligence and economy, so that by and by, he can secure and possess title to property. You and your neighbors are to be congratulated that you possess this power over your possessions which you seem to desire to take from your neighbor. Looking at the matter in this light, I am persuaded you would agree with me and cheerfully accord to him that which we desire for ourselves. But, you say, must we submit to our neighbor's notions? Yes, by the same authority that he must submit to yours. You may inquire after a remedy; the remedy is easy to find. An enlightened, refined, ennobling public opinion, and a deep regard for the same, will do much to remedy all such differences. Your neighbor has his reasons for his decision. Perhaps if you were placed in his stead you would decide just as he does. "Place thyself in my stead and see what thou wouldst do" is a maxim worthy of constant application. The power of possession is accompanied with great responsibilities.

Let the signers of the protest form a committee and go to your neighbor and say to him: "For the beauty of the place, let the trees remain," and it will have more influence over him than the law will.

Putnam avenue is a beautiful street. We have a photograph of the trees on one block ornamenting the walls of the office of this Society. It was selected for its beauty, and reflects credit upon the whole avenue. Let the signers of the protest organize themselves into a tree and improvement club of a certain block on Putnam avenue. Invite your neighbors to join with you, and build up the organization and extend it to the adjoining blocks, until the whole avenue is included, and by careful and wise management unite the best men on the avenue in its interests, and you can make Putnam avenue so beautiful, with little expense, and with great pleasure, that your property will be improved, and its value will be enhanced, and your neighborly intercourse will surprise and delight you when you learn what excellent people you have for neighbors. For such a result, if need be, you can well afford to sacrifice a score of the most beautiful trees on the avenue. If this society can aid you in forming such a club, it will take pleasure in doing so.

Very respectfully,

LEWIS COLLINS, *Secretary*.

Brooklyn, May 16, 1894.

[*From the Brooklyn Daily Eagle, September 6, 1894.*]

Grass Plots.

HOW TO CARE FOR THEM AND KEEP THEM GREEN.

To the Editor of the Brooklyn Eagle:

Among the objects of the Tree Planting and Fountain Society is this expression, "and otherwise to render the city of Brooklyn attractive." The removal of fences and conversion of court yards and other unoccupied places into well kept grass plots afford easy and inexpensive means of rendering the city attractive. Not long ago fences were a necessity. But for-

unately progress has been such that fences are not a necessity except to guard against dangerous places. Even in some farming sections fences are not necessary and are not used. In some cities and villages fences are removed and the result is a great improvement. In the city of Brooklyn some builders are omitting them with excellent effect. Occasionally we see fences removed from buildings of long standing and the improvement is marked. They are not ornamental. If they cease to be useful their removal should follow, for they are unsightly and expensive, if in no other way, in keeping them painted to prevent them becoming untidy.

GRASS.—Perhaps there is nothing within reach so lasting, ornamental, useful, easily and economically maintained, as well kept grass. During the winter, which is short in this locality, it is covered with snow a part of the time. As soon as the snow melts the grass appears and with a few sunny days it assumes its perfect state. With a little care in the way of mowing with a lawn mower, which can be done by a child, rooting out weeds and summer grasses, if any appear, watering in a dry time, and once a year giving it a little fertilizer, it will remain in perfection every day until snow comes again. If the ground is suitable and in good condition grass well kept will last a very long time. England boasts of lawns a thousand years old.

Green is the most agreeable of colors, and the color of grass is the most acceptable to the eye of all shades of green. A well-kept lawn is ornamental in the highest degree. Surround a beautiful specimen of architecture with a lawn well-kept, and it sets off the structure as nothing else will. The color of grass harmonizes with all building materials, from Parian marble to common brick. No wonder one who spends the day in cities, where none of nature's green appears, so delights at the close of his labors to go into the country, where nature has full sway, where trees abound and where are "sweet fields arrayed in living green." Grass is easily maintained. A lawn mower and a pair of grass shears are all the implements that are necessary. A child ten years old can use them. Grass should be cut once or twice a week during the growing season and less frequently

at other times. If the unnecessary fences along the streets were removed and the grass plots leveled and all obstructions to the free use of the lawn mower removed the improvement would be so great as to surprise those who have never seen it. When it was suggested that grass plots should be placed around City Hall and no fence to protect them it was thought by many impracticable. Experience has vindicated the wisdom of the undertaking. Who would consent to return to the old wilderness of flagging? To effect the change proposed requires a change of notions which will be effected more readily if people, while passing from place to place, will take note of the fences and yards, and contrast them with what would be if the fences were removed and the yards converted into lawns. Many of the enclosed places, particularly those along the sides of buildings, are very untidy; while fenced in they will probably remain so. Remove the fences along the street, except where a railing is necessary to guard against danger, and fashion the grass plot so there shall be no hindrance to the use of the mower.

The coping that supports the fence is all that is needed along the sidewalk. Plants, vines, boxes and pots containing flowers permanently located detract from the appearance of a small lawn. Pots or boxes containing beautiful flowers or foliage plants may be set near the grass and make an addition. A neat urn, well kept, may be placed on a lawn of considerable size. Shrubs and flowers may be planted on larger lawns. On large lawns trees may be used to advantage. In all cases the lawn should predominate. It requires good taste to ornament a well-kept grass plot, especially if it is small. A neat grass plot and a well-pruned tree are alike in that it is difficult to ornament either. There are many court yards in Brooklyn that have enough money expended upon them to keep a lawn perfect from snow in the spring until snow in the fall, and yet they are forbidding in looks every day and positively ugly and dirty most of the time. Evidently the people wish these yards to be beautiful or they would not spend so much time and money upon them. To prepare for a grass plot have the ground put in good condition two feet deep. Level it off, tread it down well and cover with good sod or sow approved lawn grass seed. If seed is sown it

should be kept well watered the first season and should not be trod upon. If foul weeds appear they should be pulled out. It is gratifying to see in different places evidences of the appreciation of grass as a means of ornamentation. This subject will receive more attention in the near future.

LEWIS COLLINS,

Secretary The Tree Planting and Fountain Society.

Brooklyn, August 27, 1894.

[*From the Brooklyn Daily Eagle, Monday, October 1, 1894.*]

Trees in Our Streets.

SECRETARY COLLINS DESCRIBES HOW SOME OF THEM ARE KILLED. THE BLAME THAT IS LAID TO ASPHALT PAVEMENTS, HE SAYS, IS MISPLACED.

Secretary Lewis Collins, of The Tree Planting and Fountain Society, asks the *Eagle* to give the following interesting correspondence concerning shade trees in this city :

221 JEFFERSON AVENUE, }
BROOKLYN, Sept. 28, 1894. }

PROFESSOR L. COLLINS, 44 Court Street :

DEAR SIR:—I had a fine Maple in front of my house, of which we were very proud, but two years ago, during a violent wind and rain storm, it was blown over. We thought to save it and had it righted, but it never regained its health and gradually died. Since the accident to the tree, our street—Jefferson avenue—has been paved with asphalt and in talking with some of my friends in regard to replacing they suggest that it is a question whether on account of the failure of moisture to penetrate the asphalt the tree would live. May I take the liberty of asking your advice in the matter. Can a space sufficiently large be cut in the flagging around the tree to admit a proper quantity of moisture? If you think a tree would grow, kindly give the name of the description and the name also of a reliable dealer. Thanking you in advance for any suggestion you may give, I am respectfully,

R. G. DAVISSON.

THE TREE PLANTING AND FOUNTAIN }
 SOCIETY, 44 COURT STREET, }
 BROOKLYN, Sept. 29, 1894. }

MR. R. G. DAVISSON:

DEAR SIR:—I have received your letter of inquiry of the 28th inst. The questions you have asked are of importance, and I am pleased to have them brought forward. Discussion of such a character clearly shows that there is an increasing interest in arboriculture and the people are looking more carefully into the subject. Asphalt pavement is becoming quite common, and it is so great an improvement over other pavements that people will look with a great deal of interest to whatever of injurious influence it may have. It is easy to conclude that this pavement will be injurious to trees. The suggestion of your friends that "on account of the failure of the moisture to penetrate the asphalt" appears to be incontrovertible. But most questions have two sides and both sides may be considered. We have had asphalt pavement a number of years and trees flourish along such streets quite as well as elsewhere. During the past summer we have had a very severe drought. Trees in our streets have stood the test quite as well as trees in open fields and parks. It may not be too much to say they have endured the test better. Those along asphalted streets have done at least equally as well as others. The soil of Brooklyn, and we may include much of Long Island, is especially well adapted to the growth of trees under pavements. The earth is mostly a sandy loam and gravel beds, below which, at varying depths from the surface, owing to the undulating condition of the surface, there is an inexhaustible supply of water. The moisture rising from this subterranean lake keeps the ground above well moistened and in a condition suitable for tree growth. Pavements and especially asphalt pavements prevent the moisture from passing from the ground to the air in the form of vapor. That is the reason that the earth under flagging or pavement of any kind impervious to water or vapor is moist in Brooklyn or any place with similar conditions beneath the surface, no matter how severe a drought may be. Indeed it is quite probable that here in Brooklyn we may find asphalt pavement a benefit to tree growth.

People are quite likely to attribute effects to causes having no influence. We hear much said about the effect of gas in killing trees. A friend once called my attention to what he called a clear case of a tree killed by gas. As we were approaching the tree I saw it was dead as far as the top was concerned, but I observed sprouts growing up around the base in a thriving condition. That contradicted the gas theory. On reaching the tree I found the upper band of the guard sunken in the tree until the flow of the sap was prevented, and of course death above that point was inevitable. You have some examples of this kind on the south-west corner of Jefferson and Marcy avenues. In quite a number of instances the iron bands have sunken so far into the trees that it is doubtful whether or not they will live even if the bands are removed. They certainly will die if the bands are left. There will be a fine opportunity to lay the blame to the pavement, or gas, or railroad. There are many other similar cases in Brooklyn. I see no reason why a tree planted on your lot should not do well. The trees on that block are looking well considering the care some of them get. I would suggest that you plant no more trees on your block until you have made an effort with the aid of your neighbors to form a club, as indicated on page 56 of the Bulletin I sent to you (Bulletin No. 1.) The vacant places on the block may be so utilized by studying the block as a whole that the general effect will be greatly improved. Improvements done by all uniting will be less expensive and more satisfactory. If, however, you decide to act alone and wish me to do so I will name a party upon whom you can call with confidence that you will be well served. It would be unsafe to name a variety of tree without knowing the distance intervening between those now standing, their variety and condition. The tendency is to plant large growing trees too close together. When they grow up they crowd each other and prevent symmetrical and beautiful development.

Anything this Society can do to assist you will be cheerfully done.

Very respectfully,

LEWIS COLLINS, *Secretary.*

[From Professor Hartig of the University of Munich.]

1. Tidiness is the first hygienic law in sylvi culture.
2. The immediate application of tar or grafting wax to wounds of all kinds is the best safeguard against infection.
3. Infection, both below and above ground is least likely to occur where every tree is isolated by being surrounded by others of a different species.
4. The wounds of dicotyledonous trees require protection at all seasons, in order to form a waterproof covering over the wound; grafting-wax is used by gardeners and coal tar by foresters. I have never observed any injurious effect of the tar on the tissues, as has been repeatedly asserted by practical men; in fact, I can affirm that it is only the ruptured organs and their walls that are penetrated and impregnated by the tar. Cells in the immediate neighborhood of vessels, and libriform fibres that were filled with tar remained healthy and perfectly sound after a number of years.

For coal tar and its uses see BULLETIN No. 1.

[From Garden and Forest, by Permission.]

As soon as possible after the falling of the leaves the professional tree-trimmer begins to practice his rude surgery on street trees, and he keeps it up as long as he can find remunerative employment. Almost exactly two years ago a row of fine Norway maples, standing in a neighboring city, were mutilated in this way beyond all hope of recovery, and hardly two blocks from the remains of these trees a butchery of the same sort is going on as we write. These professionals approach the owner of some city lots, and their elaborate apparatus of ladders, ropes and saws impresses him with a sense of their superiority as experts in their art. The man himself knows nothing about trees, and, probably, cannot even give the correct name of a single tree which stands in front of his door, and he is easily persuaded that, unless his trees are pruned, they will soon die, or be worthless. What these journeymen do to a

young and thrifty tree is to cut off all its large limbs to within three or four feet of the point where they separate from the trunk, and then the branches still remaining on these limbs are sawed off so as to leave stubs a few inches long. The result is, that what was once a Norway maple, for example, with a symmetrical top, and a trunk some twelve or fifteen inches in diameter, is left a mutilated stump, with a score of raw wounds to invite spores of fungi of various kinds, which will certainly kill the tree in time. It will linger on a few years, an unsightly and misshapen object, ruined by the mistaken kindness of persons whose purpose was to add to its beauty and insure its longevity.

Now, no trees need systematic pruning as much as street trees. They need to be kept to a certain shape, and in many cases they ought never to be allowed to grow beyond a certain size. But street trees will never be pruned properly unless the men who do the work are directed by some one with knowledge and experience. It is of little avail to complain that this work is done badly so long as every man is permitted to treat the trees in front of his own lots as he chooses, for it is too much to hope that the great mass of the dwellers in our cities will ever know enough about trees and their habits to care for them properly. The only safe course, as we have insisted before, is to place the street trees of every city and town under the charge of some competent official. We mean by this, not only that some man should be named to superintend the pruning, but that the whole work of planting and subsequent care should be put under his control. The official should not only know enough to select the proper varieties, but he should know how to plant the trees so that they will make an even and symmetrical growth, and how to keep them properly pruned and protected from the attacks of disease and insects and animals. But the care should begin still farther back, that is in the nursery itself, and if there were a competent commission in every city as there is in Washington, to conduct the nursery, it would be all the better. Every one of a row of street trees should be a perfect specimen, and all should be of uniform size and shape. If a city controlled its own nurseries this essential could be more easily secured. But, in any case, no street tree should be

planted until it has passed the most rigid inspection. Even if the work has been done in the best manner possible from the very beginning, the trees in the city will need constant supervision as they grow. They are surrounded by a hundred dangers here which never threaten them in the open country. But, after all, they have no more dangerous enemy than the men who have equipped themselves to prune them by the job, for they come in the garb of protectors, and the ignorant and unwary are actually induced to pay them for destroying what they profess to save.

For To-Day.

MAY 5.

He who plants a tree
 Plants a hope.
 Rootlets up through fibres blindly grope;
 Leaves unfold into horizons free.
 So man's life must climb
 From the clods of time
 Unto heavens sublime.
 Canst thou prophesy, thou little tree,
 What the glory of thy boughs shall be?

He who plants a tree
 Plants a joy;
 Plants a comfort that will never cloy.
 Every day a fresh reality,
 Beautiful and strong,
 To whose shelter throng
 Creatures blithe with song.
 If thou couldst but know, thou happy tree,
 Of the bliss that shall inhabit thee!

He who plants a tree,
 He plants peace.
 Under its green curtain jargons cease,
 Leaf and zephyr murmur soothingly;
 Shadows soft with sleep
 Down tired eyelids creep,
 Balm of slumber deep.
 Never hast thou dreamed, thou blessed tree,
 Of the benediction thou shalt be.

He who plants a tree,
 He plants love;
 Tents of coolness spreading out above
 Wayfarers he may not live to see.
 Gifts that grow are best;
 Hands that bless are blest.
 Plant; Life does the rest.
 Heaven and earth help him who plants a tree,
 And his work its own reward shall be.

—LUCY LARCOM.

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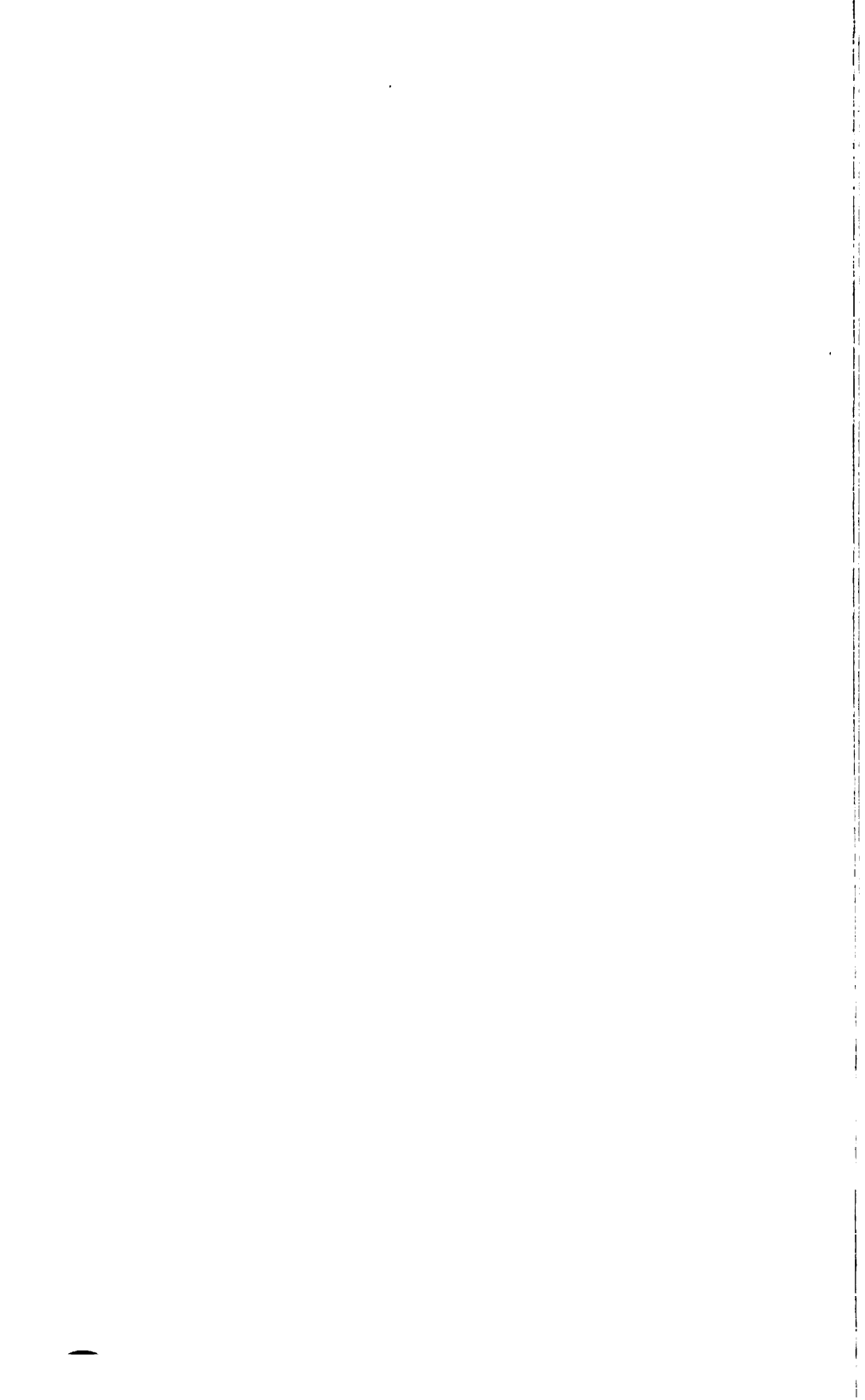
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